REPORT

ON

THE EXCAVATIONS AT NASIK AND JORWE

1950-51

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Report

on

The Excavations at Nasik and Jorwe

1950-51

by

H. D. Sankalia

and

S. B. Deo

With Topical Contributions by

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DECCAN COLLEGE
Postgraduate & Research Institute
POONA

REPORT

ON

THE EXCAVATIONS AT NASIK AND JORWE

1950-51

by

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and

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To

Sati Godavari Mata

of

Sakuri

FOREWORD

It was said by a famous archaeologist that the British people, in their desire to prove the antiquity of London, had to dig up its past. That was the only way of proving London's antiquity, despite literary evidence to that effect. The same is true of many sites in India. Literary or traditional evidence of a sort does exist, but it is not reliable from a strictly scientific point of view and it does not picture the past as vividly and faithfully as the discovery of ancient ruins will do.

It was with this view that the University of Poona, very soon after its inception, came forward to help the Deccan College to organise excavations at Nasik under its auspices. The help was not much, but it has gone to prove that not only Nasik is one of the most ancient sites in Maharashtra, but the entire Godavari valley was the scene of cultural activities during the proto-historical period. This, however, is only a beginning. The clues supplied by Nasik have to be followed up with a view to knowing the full extent of the culture of the Godavari Valley and the life of the early settlers there. With this end in view, the University is assisting another small excavation at Nevasa this season. It is hoped that it will throw more light upon the culture of the early inhabitants of the Godavari Valley.

M. R. Jayakar

INTRODUCTION

The excavations at Nasik and Jorwe were conducted by the Deccan College Research Institute under the auspices of the University of Poona. Not only the Institute but scholars—Indian and foreign—interested in the evolution of past cultures should, indeed, feel grateful to this young University for taking such deep interest in field archaeology, and encouraging it by small but regular grants since 1950. These alone have enabled me to continue work on the project and undertake further explorations in the Godavari Valley.

Besides confirming in a number of details the character of the Early Historic Culture in Maharashtra, as previously known from the Institute's work at Kolhapur, Nasik has provided positive and reliable evidence for the existence of at least two cultures—one pre-historic, the other proto-historic,—which were hitherto quite unknown, and from the nature of the terrain presumed not to have existed in this part of India. With the clues supplied by Nasik and Jorwe, one can look forward to a systematic and large scale investigation of the extent and full significance of these cultures. In the opinion of Sir Mortimer WHEELER, both Kolhapur and Nasik need an extended excavation. This, the Institute hopes to undertake when larger funds are available.

The present work lasted from November 27, 1950 to February 20, 1951. Besides conducting the excavations, the regions in and around Nasik as well as Jorwe were systematically explored. The work was carried out in collaboration with my former colleague and Curator of the Museum, Dr. M. G. DIKSHIT, my pupil assistants Dr. S. B. DEO and Shri Zainuddin ANSARI. Dr. DIKSHIT was in charge of pottery and he was to contribute the chapter on it, as well as those on beads and coins. But later he joined the University of Saugar. So, on my return from Europe, I undertook to write on pottery and coins also. Dr. DEO directly supervised the work of excavation in the main trench. He has, therefore, prepared under my guidance the section on stratigraphy, besides those on beads and objects of iron, stone, terracotta, glass and shell. Shaikh Zainuddin ANSARI was in charge of drawings and photography and also helped in the supervision of digging. The contour plan of the main mound was made by him under the guidance of Shri G. G. VAIDYA. I am extremely thankful to the latter for his help. Dr. A. V. NAIK, one of my former pupils, and now the Secretary, Extra-Mural Department, University of Poona, has contributed the section on Jorwe pottery, and a junior pupil, Shri K. D. BANERJI, on the extra-ordinarily large collection of bone points.

For the identification and contribution of reports on some of the excavated objects such as bone points, bones, shells, wood, glass, bronze celts, inscribed potsherds, and Muslim coins, grateful thanks are rendered to

Dr. F. E. ZEUNER,	Professor, Environmental Archaeology, University of London,
Dr. D. D. KARVE,	Principal, Fergusson College, Poona,
Dr. J. C. GEORGE,	Reader and Head of the Department of Zoology, the M. S. University of Baroda, Baroda,
Dr. S. L. HORA,	Director, Zoological Survey of India, Calcutta,
Shri K. A. CHOWDHURY,	Wood Technologist, Government of India, Dehra Dun,
Dr. B. B. LAL,[1]	Archaeological Chemist, Government of India, Dehra Dun,
Shri B. R. PATHAK and Shri M. K. MADHEKAR	Engineering College, Poona,
Dr. B. Ch. CHHABRA,	Government Epigraphist for India, Ootacamund,
Shri R. G. GYANI and Shri V. A. BANAVALKAR	Curator and Archaeological Chemist respectively, Prince of Wales Museum, Bombay.

For granting permission to excavate at Nasik and making our stay on the burial ground comfortable, thanks are also due to

Shri A. GHOSH,	at present Director General of Archaeology in India,
Shri M. N. DESHPANDE,	at present Superintendent, Archaeological Department, Western Circle, Baroda,

The Collector, and
The Chief Superintendent of Police, Nasik,
Shri B. L. PATANKAR, Principal, H. P. T. College, Nasik,
Shri P. B. AURANGABADKAR, Nasik,
Dr. RAMDAS, Nasik,

1. Dr. LAL's report is being published separately in the *Bulletin of the Deccan College Research Institute*, Vol. XIV, No. 1, as his revised draft was not received when this was sent to the Press. Copies of Dr. LAL's report, however, will be furnished along with the Excavation Report.

Shri J. P. Joglekar,	Retired Photographer, Archaeological Survey of India, for help in reconstruction of pottery,
Shri N. A. Gore,	Now Librarian, Bombay Branch of Royal Asiatic Society, Bombay,
Shri R. D. Joshi,	Professor, Wadia College, Poona.

A part of the expenses for printing this report was met by a subvention from the University of Poona. So to the University I, once again, offer my thanks, as well as to Dr. S. M. Katre, the Director of the Institute, whose unfailing kindness and help have alone made the publication of the report possible.

Lastly I must express my thanks to Dr. M. R. Jayakar, the Vice-Chancellor of the University of Poona, for writing a Foreword to this Report, at a very short notice. It is our aim to fulfil the hopes expressed by him.

H. D. Sankalia

Thursday, 16th December 1954.
Excavation Camp,
NEVASA.

Postscript

At Nevasa (Dist. Ahmadnagar), all the elements of the Nasik-Jorwe culture—Painted Pottery, and Microliths including lunates and obliquely blunted blades,—and a couple of Polished Stone Axes with Hammer Stones are found in a regular excavation at a depth of about 20 feet from the ground level, below the earliest occurrence of Black-and-Red Ware, Satavahana coins and floorings made with lime and reeds. So there is no doubt about its relative stratigraphical position and probable date, which should be somewhere in the Late Chalcolithic or the Bronze Age.

H. D. S. (26-1-55)

The author acknowledges his indebtedness to the University of Bombay for the grant-in-aid received by him from the University towards the Cost of Publication of this work.

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Figs. 61–70 — between pages 170-171:

Fig. 61. Complete Painted Pottery vessels from Jorwe (unstratified) 1-2 Spouted, 3-4 Short necked.
Fig. 62. Types 1-10.
Fig. 63. Types 11-23.
Fig. 64. Types 24-32.
Fig. 65. Types 33-36 and a complete Carinated Bowl, 36a.
Fig. 66. Types 37-46.
Fig. 67. Types 47, 49, 51.
Fig. 68. Type 50.
Fig. 69. Types 52-66. Simple and unpainted.
Fig. 70. Types 67-73 Decorated.

Figs. 71–74 — between pages 172-173:

Fig. 71. Types 74-81 Decorated,
Fig. 72. Types 82-85 Decorated,
Fig. 73. Types 86-89 Decorated.
Fig. 74. Types 90-101 Simple.

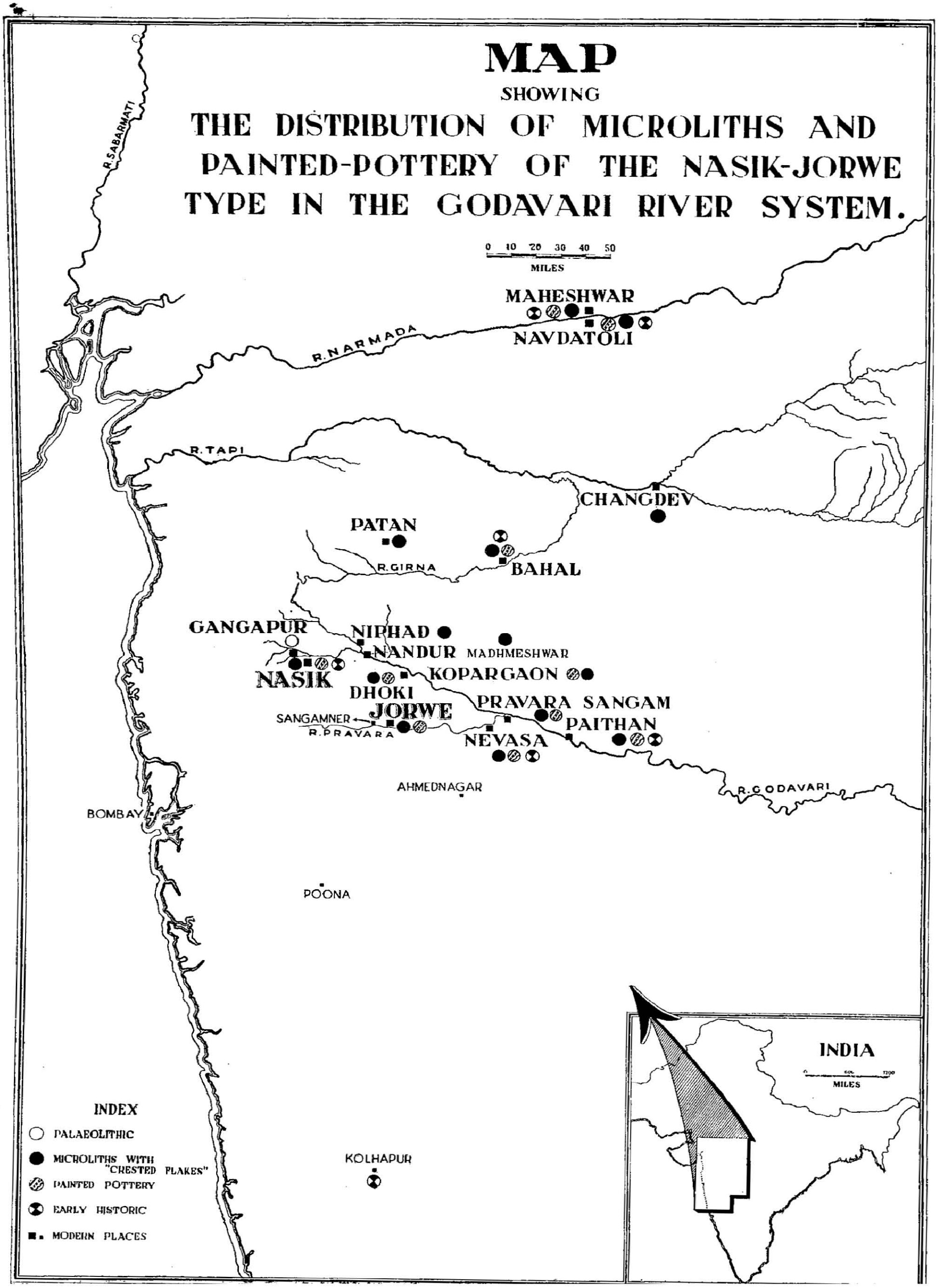
Figs. 75–77 — between pages 174-175:

Fig. 75. Types 102-110 Simple (Ringed stand).
Fig. 76. Types 111-117 Shallow Bowls and Urns (?).
Fig. 76a. Gray Ware. Types 118-118a (Urns ?)
Fig. 77. Types (118b, 119, 127).

Figs. 78–85 — between pages 176-177:

Fig. 78. Painted Spouts and knobs of Lids.
Fig. 79. Zigzag patterns (1-12).
Fig. 80. Oblique Brush Strokes, Cross-hatched and Blank Lozenges and Rhomboids. (1-15).
Fig. 81. Zigzag, wavy lines. (1-12).
Fig. 82. Solid squares, Grass patterns etc. (1-12).
Fig. 83. Miscellaneous Designs. (1-9).
Fig. 84. Incised (1-3).
Fig. 85. Scratched and Incised.

Frontispiece.



I

SITE AND SUMMARY

Nāsik[1] (N. lat. 20°, E. long. 73' 51') is an ancient town, situated on both the banks of the Godāvarī. This is one of the major rivers of the Deccan (Mahārāṣṭra). It rises in the Sahyādris (Western Ghāts), near Trimbak, about 20 miles south-west of Nasik, and flows a little south across the heart of India, meeting the Bay of Bengal in a broad, fan-shaped estuary, near Rājahmandry on the east coast. Nasik town is also the head-quarters of the district of the same name. This forms a part of the Maharastra unit within the State of Bombay.

Antiquity

Literary, epigraphical and monumental evidence supplies almost an unbroken history of Nasik for nearly 2,500 years. This pre-eminent position it held, probably because it lies on the best route between Central India and the west coast. As the new archaeological data seems to suggest, this route might have followed the proto-historic settlements springing up on the Godavari and its tributaries, the Pravarā and the Girṇā.

The earliest well authenticated mention of Nasik is by Patañjali[2], a grammarian who lived in c.150 B.C. According to him, the town of Nāsikya is referred to in the commentary (*Vārttika*) of Kātyāyana, another grammarian of about 250-200 B.C., on an aphorism of Pāṇini (between 600 B.C.–350 B.C.). That this town was in the Deccan (*dakṣiṇāpatha*) was known to several writers like Varāha-Mihira[3] (c.550 A.D.), and the authors of *Vāyu*[4] and *Varāha Purāṇas*[5], *Atharva-pariśiṣṭa*, *Āvaṣyakacūrṇi*[6] (c.600 A.D.), and *Nandisūtra*[7]. This list can be augmented if all the available literature is thoroughly ransacked. Suffice here to note that early Hindu,

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1. For other details, see, *Gazetteer of the Bombay Presidency* (B.G.), Vol. XVI (Nasik, 1883) p. 461 ff.

2. *Pātañjala Mahābhāṣya*, published by Pandit Nandakishore Shastri, Adhyāya 6, p. 585 (Banaras, 1938). Panini, *Aṣṭādhyāyi*, VI, 1, 63, Vārttika 3. See also Monier-Williams, *Sanskrit-English Dictionary*, p. 538.

3. *Bṛhat Sañhitā*, Adhyāya 14, p. 89. Ed. by H. Kern *in Bibliotheca Indica*, (Calcutta, 1865).

4. Patil D. R., *Cultural History from the Vāyu Purāṇa*, pp. 270-309, (Poona, 1946).

5. Monier-Williams, *op.cit.*

6. p. 566, (Ratlam, 1928).

7. p. 88, (Satara, 1942).

Jain and Buddhist (?) literature does record the existence of Nasik as a town and a country (*deśa* or *janapada*) in the Deccan.

The epigraphical evidence is almost equally old. One of the earliest inscriptions in the caves, now called Pāṇḍu Leṇā—but in the inscriptions the hill is called Tiraṇhu (Sk.Trirasmī)[8],—about five miles south of Nasik, the latter is called a *nagara* (town)[9]. The townsmen are called Nāsikaka. Some of these, men and women, high and low—ministers, bankers, even a fisherman, vied with each other in contributing towards the excavation of caves not only at Nasik but in far off places like Kānheri, Beḍsā and Bhārhut in Central India for the Buddhist Bhikṣus and their maintenance. No less zealous were the rulers,—be they foreigners Śakas, Yavanas or indigeneous—Sātavāhanas. In fact from these inscriptions alone, one can picture the political, administrative, social, religious and economic conditions of the period between c.200 B.C.–A.D. 300, when first the Sātavāhanas, then the Śakas, known as Kṣaharāta Kṣatrapas, under Nahapāṇa, again the Sātavāhanas and lastly the Ābhīras governed the country. Though the rulers changed in quick succession, the eclecticism of the time was such that Buddhism as well as Brahmanism continued to flourish, and the town also probably remained prosperous.

The exact condition and status of Nasik in the subsequent period (c.300 A.D.–770 A.D.) cannot be ascertained. It is definite that it was comprised under the territories of the Traikūṭakas, Kaṭaccuris, and the Western Cālukyas[10]. The successors of the last, viz. the Rāṣṭrakūṭas, made Nasik once again the district headquarters (*viṣaya*)[11], or a still larger unit (*deśa*)[12]. This position it had to yield to Sinnar, a smaller town, 17 miles south-east of Nasik, when the former was made a capital by the early Yādavas[13].

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8. DR. KATRE kindly pointed out that Tri-aśmī is not the correct Sanskrit form from Tiraṇhu, or *vice versa*. But another inscription at Nasik (*E.I.*, VIII, p. 78) gives the Sanskritized form. The true phonological equivalent would be Trirāsnā. One of the synonyms of the latter is Triraśmī.

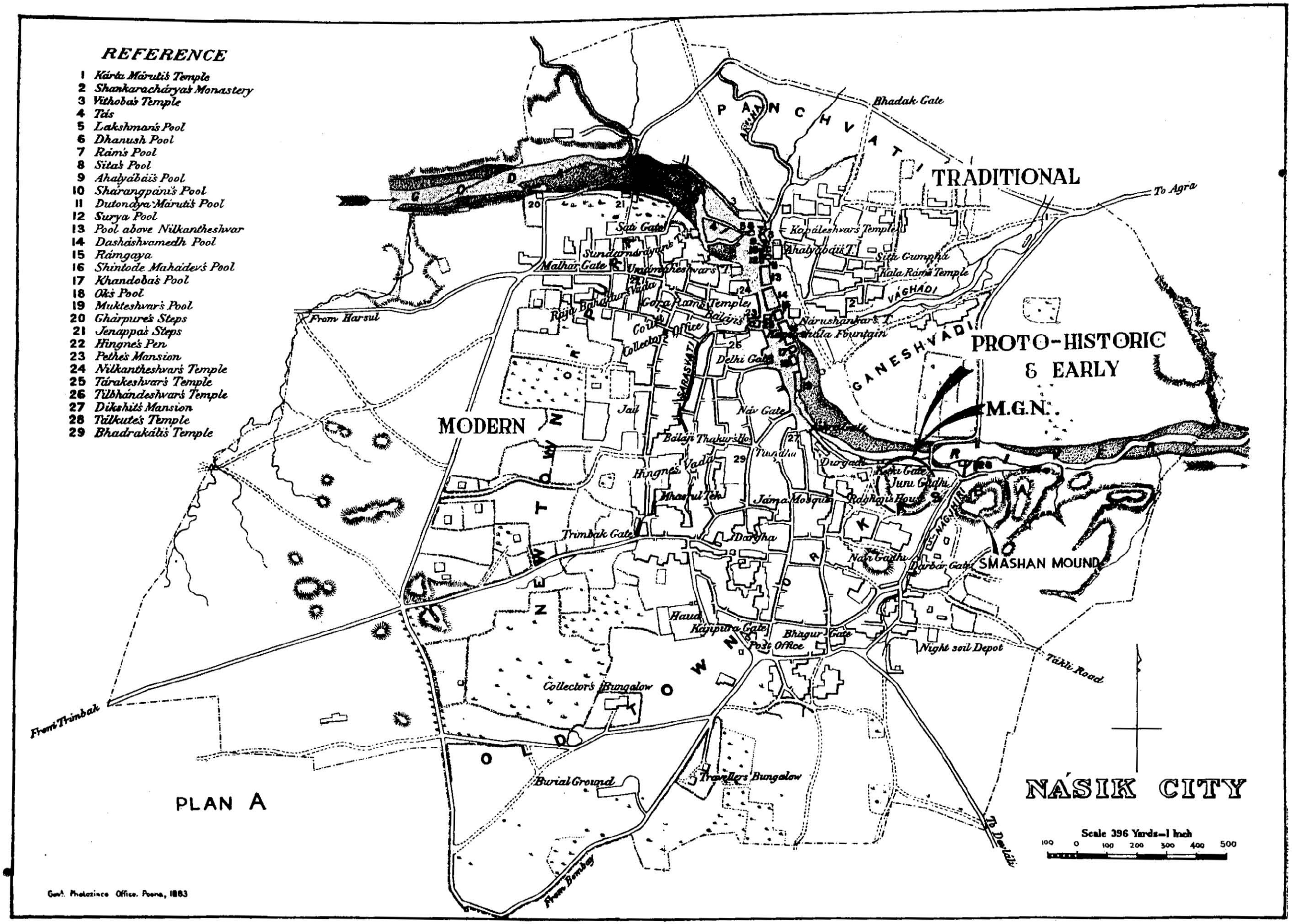
9. *E.I.*, VIII, p. 93, Ins. No. 22; also LÜDERS, H., *E.I.*, X, Appendix, Ins. No. 1126, p. 124.

10. See SANKALIA, H. D., *Archaeology of Gujarat*, pp. 11-13. (Bombay, 1941).

11. Dhulia Copper-plate grant of Govinda II, Saka 701 (A.D. 779), *E.I.*, VII, p. 184.

12. Wani Dindori Copper-plate grant of Govinda III, Saka 730 (A.D. 806-7). *I.A.* II (1882), p. 157.

13. NAIK A. V., *Archaeology of the Deccan* (in Ms. form), p. 149.



Plan of Nasik showing its three Division

The town, and this part of the Deccan finally passed under the various Muslim rulers—the Delhi Governors (1312-47), the Bahmanis (1347-1487), the Nizāmshāhi of Ahmadnagar (1487-1637) and the Mughals (1637-1760), until the Marāṭhās fully and finally conquered it in c.1760. The former had fortified the old settlement, the scene of the excavation, and known since as Junī Gaḍhī.

Now began another period of prosperity for the town. Stone-paved *ghāṭs* (steps with landings) were built along the river banks, old temples were renovated, and new ones erected, while the Maratha Sardars (noblemen) constructed huge *vāḍās* (houses with large enclosures), in a totally different quarter of the town.

Inspite of its being an ancient town, lying on the highway, and the resort of Buddhists for several centuries, the Chinese travellers—Fa-hien, Hiuen-Tsiang, I-Tsing and others do not seem to have visited Nasik. So also the later Arab, Italian and Portuguese visitors who travelled through India towards the close of the Hindu and the beginning of the Muslim period. We have, therefore, to content ourselves with a solitary reference by Ptolemy.[14] This Graeco-Egyptian geographer mentions Nasik as situated to the east of the river Namados (Narmadā), having its latitude 170° N. and the longitude 114°E. This location is fairly correct, except that Nasik is to the south-east of the Narmadā, and its latitude 20°N.

Nasik is thus divisible into three parts :—

(i) Traditional ('Rāmāyaṇa'), or the earliest Nasik, known as 'Pañcavaṭī'.[15] This is located exactly opposite the site of the excavation, but on the left or the east bank of the river. [See Plan A].

There is no mention of Nasik in the *Ramayana*. Evidently it cannot be, in view of the times it is supposed to refer to. The epic, however, does refer to one Pancavati, close to the Godavari. It was situated within the Daṇḍaka forest, which also comprised or was adjacent to Janasthāna. Here lived numerous Rākṣasas. The forest was full of trees, flowers, fruits, and beasts among

14. McCrindle's *Ancient India as described by Ptolemy*. Ed. by Surendranath Majumdar Sastri, pp. 152, 157. (Calcutta, 1927).

15. *Śrimad Vālmiki Rāmāyaṇam*, Aranyakanda, Sargas 12-30, pp. 316-345. (Published by R. Narayana-Swami Aiyar, Madras, 1933). This edition is published with the help of 11 manuscripts, mostly South Indian. A critical edition is under preparation at Baroda. It would be, indeed, interesting to see what the latter has to say about the existence of Pancavati. Professor G. H. Bhatt, Director, Oriental Institute, Baroda very kindly made inquiries and informed me that Pancavati and the Godavari do appear in Gauḍa (Bengal) and in the north-west recensions (Mss.) of the Rāmāyaṇa.

which the deer predominated. It was also the abode of a few sages who practised penance and performed Vedic sacrifices. At the advice of the sage Agastya,[16] Rāma repaired to this region on the Godavari, with Sītā and Lakṣmaṇa. There they built an *āśrama*. The struggle with the Raksasas began here, with Rama killing 14,000 of them along with their leaders, and ended with the destruction of their chief, Rāvaṇa.

(ii) Early and Mediaeval or "Muslim" Nasik, formerly called Gulshanābād (City of Roses), but now known as Juni Gadhi, and the site of the excavation. It is situated exactly on the right bank, and to the south of (i).

(iii) Modern or "Maratha" Nasik, lying to the north-west of (ii) and west of (i), forming the nucleus of the present town.

Previous attempts

Possessing so much evidence of its past history, the site of the ancient town, contemporary with the Buddhist caves, had escaped detection, though coins of Nahapāṇa and various Satavahana rulers had been occasionally found. Efforts were made, no doubt, by the earlier scholars to obtain its traces. The region near Govardhan, a village about 6 miles west of Nasik, (and noticed 12 times in 5 inscriptions) was carefully surveyed by PANDIT Bhagwanlal Indraji[17] and Henry COUSENS, (then Superintendent of the Archaeological Survey, Western Circle, Poona).[18] The former succeeded in laying bare what appears to be a pre-historic (?) urn-burial, within a stone circle, covered by an earthen mound, about 26 feet in height. The latter was not so successful. As the Deccan trap appears on the surface, leaving a thin layer of soil, and as the town had passed through several building phases, COUSENS did not expect to find a high artificial mound, except a *stupa*. Even this he could not get. So no further attempts were made to search for early Nasik.

Discovery of the site

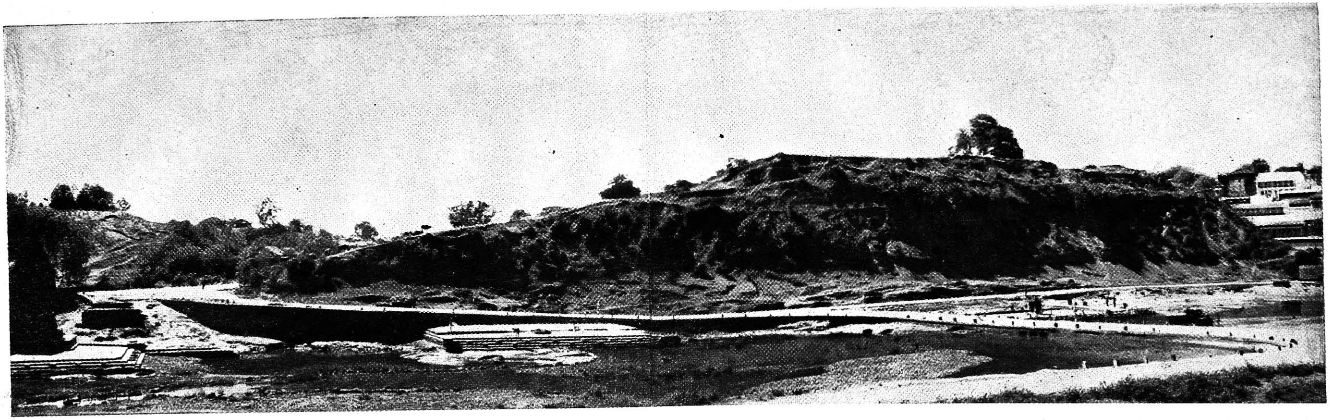
Its discovery, some 40 years later, is solely due to the advance in scientific archaeology. In 1948, sherds of a fine black, and black-and-red

16. Agastya's previous history of this forest is interesting from the point of view of the past climate. He says that the region was abandoned by man and beasts and deforested, because for a long time there was no rain. When he crossed the Vindhyas and went south, he got the conditions changed. This description, however fantastic, and describing events of which man cannot have memory, surprisingly applies to the wet, dry and wet phases indicated by natural stratigraphy, revealed at Gangāwāḍi and Nasik. See p. 8 below.

17. *B.G., op. cit.*, p. 534-40.

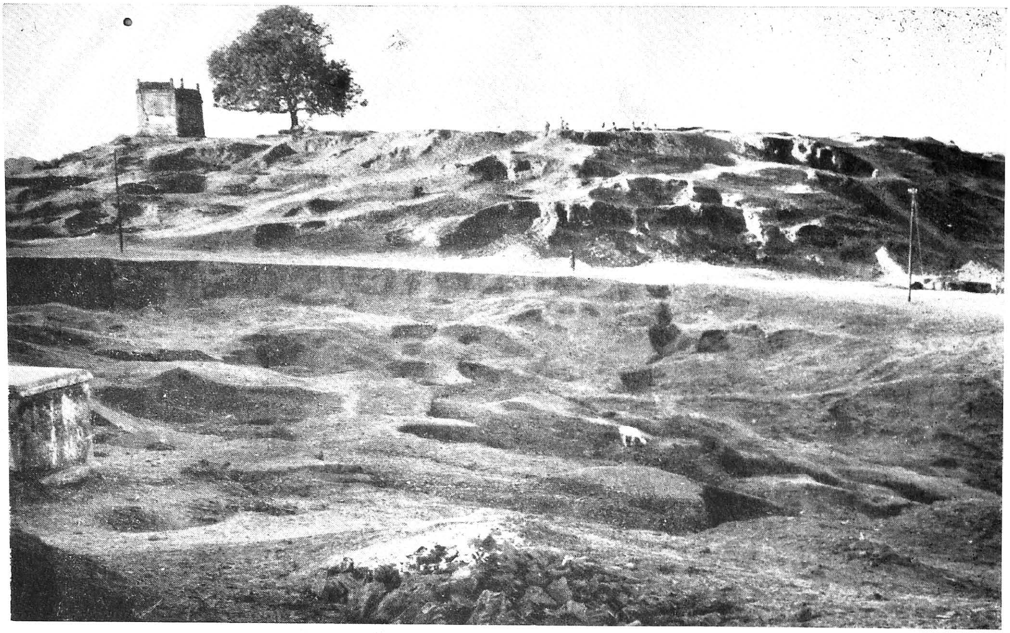
18. COUSENS, Henry in *Progress Report, A.S.I., W.C. for 1908, p.* 29.

PLATE I



Panoramic view of the Matichi (JUNI) Gadhi (Mound) from the Pancavati (northern) side, Nasik.

(*See p. 5*)



(a) View of the MG.N. mound from S.E., showing the black soil layer. (*See p. 5*)

(b) View of the same mound from S.W. (*See p. 5*)

ware, as well as of a lustrous black ware, known as the N.B.P., were shown to one of us.[19] These were collected from a mound, known as Junī (old), or Mātīchī (earthen) Gaḍhī (fort). This is situated almost on the eastern outskirts of the modern town, adjoining the Hindu cremation and Lingāyat burial ground. [See Plans A and B].

The mound is nearly 100 feet high. It is about 800 feet in length and 400 feet in breadth. On the north it is bounded by the Godavari, on the south by the Kumbhārwāḍā road, and the locality of the same name, by the Agra Road, and a stream and drainage, called Nāgjhari on the east, and the Gāḍge Buvā's Dharmaśālā on the west. [pls. I, II]. Except for a small portion in the centre and towards the west, the mound is very uneven. The northern side overlooking the river presents almost a vertical section, wherein the natural and artificial layers are clearly visible. The western, southern and the eastern faces are comparatively less steep, but of these the last is well graded. From the river level the surface rises up southwards, and since this has been cut by the Agra Road and the streamlet, the sides of the mounds are exposed. Sections of these reveal thick layers of fine gravel and silt capping the older cemented gravel and the bed rock. These indicate that once the Godavari flowed in a still southerly direction, its limit on this side being the Kumbharwada, or the Navī Gaḍhī. [See Section C]. This was, of course, in the much distant past. Later the river shifted its course northwards, cut out the aggradation deposits and began to flow nearly 65 to 70 feet below its previous level. On the abandoned terrace developed a five to six feet layer of black soil. This is very well seen on the south-eastern face of the mound. [See pl. IIa].

The remaining 20 to 25 feet are taken up by man-made debris. Its thickness is not uniform. The deposits are comparatively thin where earth-grabbers have removed a considerable portion of the earth. But there is no doubt that once the early habitation extended right upto and including the entire area of the Gadge Buva's Dharmasala on the west, that of the Kumbharwada on the south, and northwards beyond the present cliff. River action is partly responsible for its destruction on this side.

Besides a dilapidated mosque on the western end, and a number of ring or brick-lined wells jutting out from within the eastern and southern sides of the mound, a line of irregular and discontinuous buried rubble stone-

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19. Who collected these sherds is not known to me. My attention was drawn by Shri M. N. Deshpande, then Assistant Superintendent, Arch. Deptt., Western Circle, Poona.

walls was also seen on the eastern side. The small and big gullies and the slopes were strewn with all sorts of potsherds, conch-shell bangles, occasional coins and beads. The most striking among these surface indications was a thick layer of bone points, numbering over 10,000 on the northern slope of Kumbharwada Mound. [See pl. IIIC].

Though the mound appeared disturbed by earth-grabbers, and building activity during the Muslim period, it seemed, that this affected only the top layers. The earlier habitation layers resting on the natural ones seemed to be untouched.

Aim of Excavation

From the nature of the pottery as well as other finds and the thickness of debris, we were encouraged to attempt a vertical excavation. For here was a chance to lay bare a section of the ruins of the ancient town which had hitherto escaped detection. The occurrence of the Northern Black Polished Pottery (N.B.P.), so far south, also gave the hope that we might succeed in unearthing the traces of a culture contemporary with the earliest literary and epigraphical references. For, this distinctive pottery, native to the Gangā-Yamunā doab, seems now to have originated at least in the 4th-5th century B.C. Looking to the traditional antiquity of Nasik, there was also a lurking hope that a careful excavation of the lowest strata might yield clues of a still earlier—pre—or proto-historic—-culture or cultures.

Summary of Results

Intensive exploration in and around Nasik, and excavation at the site referred to, as well as at Jorwe, near Sangamner in the Ahmadnagar District, fortunately justified all our hopes and expectations. These have brought to light five main cultural periods. Briefly their features are as follows :

> *Early Stone Age.*[20] Tools of trap rock—cleavers, scrapers, and hand-axes of Late Abbevillian and Early Acheulian type—from the buried river bed at Gangawadi, 10 miles north-west of Nasik.[21]

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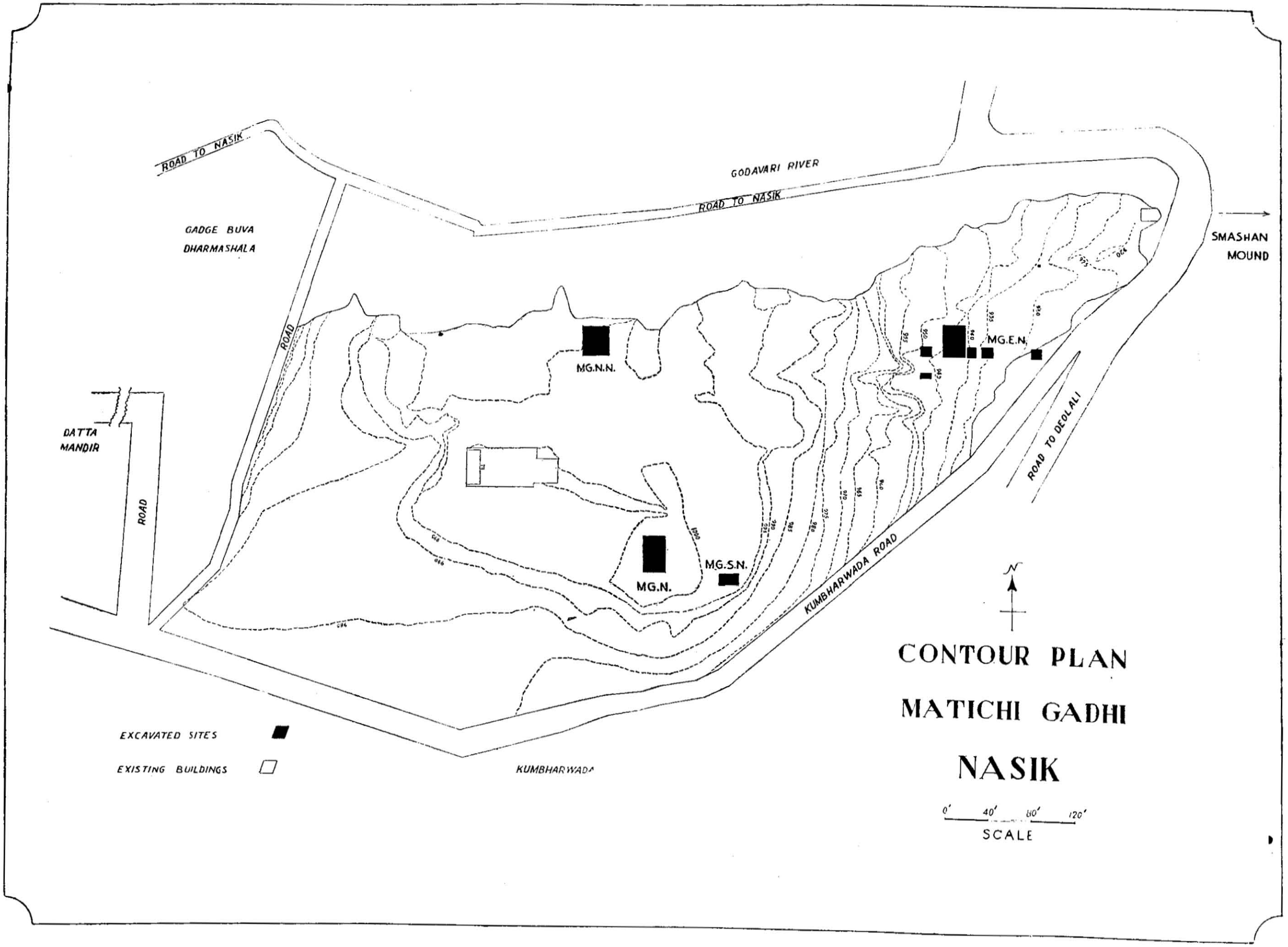
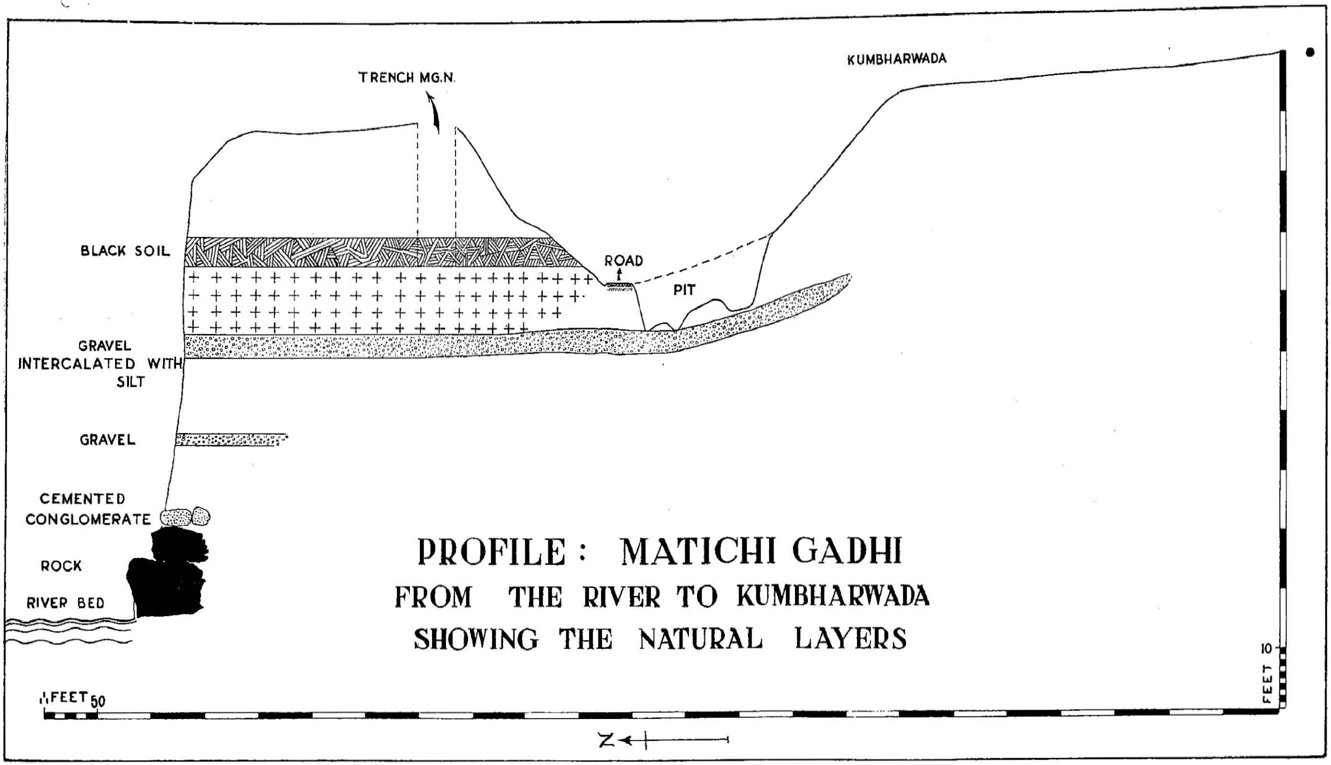
20. Since this period is not represented in the regular excavation it is not numbered and included as a period in this summary.

21 For details, see SANKALIA, H. D., *The Godavari Palaeolithic Industry,* Deccan College Monograph Series : 10 (Poona, 1953).


ROAD TO NASIK
GODAVARI RIVER
ROAD TO NASIK
GADGE BUVA DHARMASHALA
SMASHAN MOUND
ROAD
MG.N.N.
MG.E.N.
DATTA MANDIR
ROAD
ROAD TO DEOLALI
MG.N.
MG.S.N.
KUMBHARWADA ROAD
CONTOUR PLAN
MATICHI GADHI
NASIK
EXCAVATED SITES
EXISTING BUILDINGS
KUMBHARWADA
0' 40' 80' 120'
SCALE

Plan 'B' (*See p. 5*)



Section 'C' *(See pp. 5, 8, 19)*

Period I. *Chalcolithic or Early Bronze Age.* Refined microliths—trapeze, lunates and two-edged blades, some possibly obliquely blunted into a point, of chert and chalcedony, in association with an ochre-washed orange coloured pottery, occasionally painted with red or black bands.

At Jorwe along with these cultural elements were, probably, associated low grade bronze axes and a copper bangle. A definite assertion cannot be made, since these were not found in the regular excavation.

Period IIA. *Early Historic.* Besides the N.B.P. and the Megalithic-like black, and black-and-red ware, occur also an utilitarian red pottery, ruins of mud-walled houses, with ring-wells or soak pits, and articles of domestic use, such as the four-legged saddle querns, and tools and weapons of iron.

Period IIB. *Later phase of Early Historic.* In addition to the above, cast uninscribed coins, and a few sherds of the Āndhra criss-cross ware.

Period III. *Roman Contact.* Sherds of Samian ware, and sprinklers and bowls of Red Polished ware; houses of large burnt bricks, roofed with well-made terracotta tiles. These should be contemporary with the period of the Ksaharata Nahapana, his son-in-law Ṛṣabhadatta, as well as their "exterminator",—Satavahana Gautamīputra.

Period IVA. *Early Muslim.* Ruins of Stone Structures. Celadon and Glazed ware.

Period IVB. *Mughal.* Ruins of Stone Structures, with a coin of Akbar.

Period IVC. *Maratha.* Ruins of Stone Structure, with a coin of Malhār Rāo Gāekwāḍ of Barodā on the surface.

There is a definite overlap between Periods IIA and IIB, and Periods II and III, while the late disturbance has caused an admixture between finds of sub-phases of Period IV and II (and between these and those of II and IV) in the main trench. Period III does not seem to be represented in the main trench.

Conclusion

From the summary it will be evident that the excavation, though on a limited scale. does confirm the succession of events as known to history

and briefly related above (pp. 2-4). What we miss in the archaeological sequence is the finds of the long period between A.D. 300—A.D. 1300, when the dynasties mentioned previously ruled the country, one after the other. This lacuna may be due to the fact that this particular site was abandoned during the period in question, and re-settled, as affirmed by tradition, only during the Muslim period.

The discovery of a proto-historic habitation at this place is indeed important. For, traditionally Pancavati, on the opposite bank, is believed to be the site of such or ancient habitation. Though the *Gazetteer* had noted the existence of a low mound, 30 feet in height, about 100 yards, south of Sita's cave, no traces of it have remained, nor any other sites or their remains, were seen during our explorations. Excavations, on the other hand, indicate that one of the areas at Nasik, where civilization first grew up, is the area known as Juni or Matichi Gadhi. From the location of the Smaśāna (Hindu cremation and the Lingāyat burial ground) at the foot and the top respectively of a mound across the Deolāli road, on the east, it can also be asserted that the habitation never extended eastwards, but either began or ended at this point. For in India, as a rule, the smasana is situated outside the village, town or city. Further this mound (on which we had encamped) was found to be thoroughly devoid of any antiquities.[22]

The nature of the soil suggests that when this culture flourished, the region was well-wooded. It was also a long time after the Palaeolithic. For the layer containing the tools of the latter are buried deep below in thick deposits of earlier gravel and clay, and separated from the black surface soil by nearly 20 feet of finer gravel and silt, both at Gangawadi and at Nasik.[23] These suggest three main climatic phases—the first wet phase, then a dry phase, and again a wet phase. During the last, owing probably to vegetation, a layer of heavy black or blackish soil was formed on the fine gravel and silt, deposited during a phase of aggradation. It was then that a more civilized man, knowing wheel-turned pottery, and perhaps the art of smelting copper and tin, though for most of his needs using tiny stone tools, started cutting out the forests, and settled on the land, all along the

22. Future workers might question this statement when they discover pottery at the eastern end of this mound. For their information it is necessary to state that this is due to "re-deposition" by us, as the flat surface was converted into our "Pottery Yard."

23. At Nasik the lowest clayey layer is not visible, but the earlier well-cemented gravel is exposed at the bottom on the western side of the Smaśāna Mound. It rests on the rock.

Godavari and its tributaries, the Girna and the Pravara. For subsequent explorations have revealed a few identical elements of this culture, besides Jorwe, at Bhojāpur[24] near Sinnar, Kopargaon[25], Nevāsā[26], and Paiṭhaṇ. It was on the debris of this, but probably after a lapse of time (for there is no overlapping of cultures at Nasik, whereas Jorwe and Kopargaon seem to be One-Period sites), that the early historic cultures grew up. Thus arose the famous towns of the Deccan, such as Nasik, Paithan, Karhād and Kolhāpur.

II

STRATA AND STRUCTURES

Localities and Trenches

Four trenches were laid on the mound called Matichi Gadhi, hereinafter called MG.N., with a view to knowing the nature and extent of old habitations, as these were not clearly visible in the natural and artificial exposures of the sides of the mound.

The main trench, called MG.N.(I) (20 feet ×40 feet), was laid on the highest and the available even top of the mound with the object of finding the maximum succession of layers. [Plan B].

A series of circular brick structures were exposed on the mound at various places. In order to know their nature, purpose and antiquity, a trench (10 feet ×10 feet) on the southern slopes of the mound—called MG.S.N. (II) henceforth—was laid in such a way as to have two sections of the trench at right angles to the three of such structures already exposed to view.

Besides the circular brick structures, the mound exposed several others. A part of a brick wall was exposed on the northern section of the mound overlooking the river Godāvarī, flowing some eighty feet below. A trench (10 feet ×10 feet) was laid so as to include the brick wall in it, as it was hoped to make the position and the antiquity of the wall more clear. This trench lying on the northern side of the main trench MG.N. at a distance of nearly 170 ft., was called MG.N.N.(III).

24. Information kindly supplied by Shri Sali and Shri M. N. Deshpande, Superintendent, Arch. Depart., Western Circle, Poona.

25. This site was discovered by Shri Sali. Later it was jointly examined by all the three of us.

26. See the list of sites p. 154 , and Map (Frontispiece).

With a view to understanding the nature and antiquity of several stone structures that were partly exposed and also to ascertain the depth of the natural earth on the eastern slopes of the mound, a series of step trenches (10 feet × 110 feet) were laid out when digging in the main trench was much advanced. These were called as MG.E.N.(IV).

Another low mound lying to the south of the MG.N. and separated from it now by a modern road but perhaps originally a part of the MG.N., and called " Kumbharwada ", owing to the settlement of potters on it, was also taken up for excavation. The earth-grabbers had exposed a well built brick-wall running east-west. Trenches termed K.W.N.(V), therefore, on either side of the wall were laid, so that the sections of the upper and lower trenches on the slope might be at right angles to the wall.

MG.N.(I)

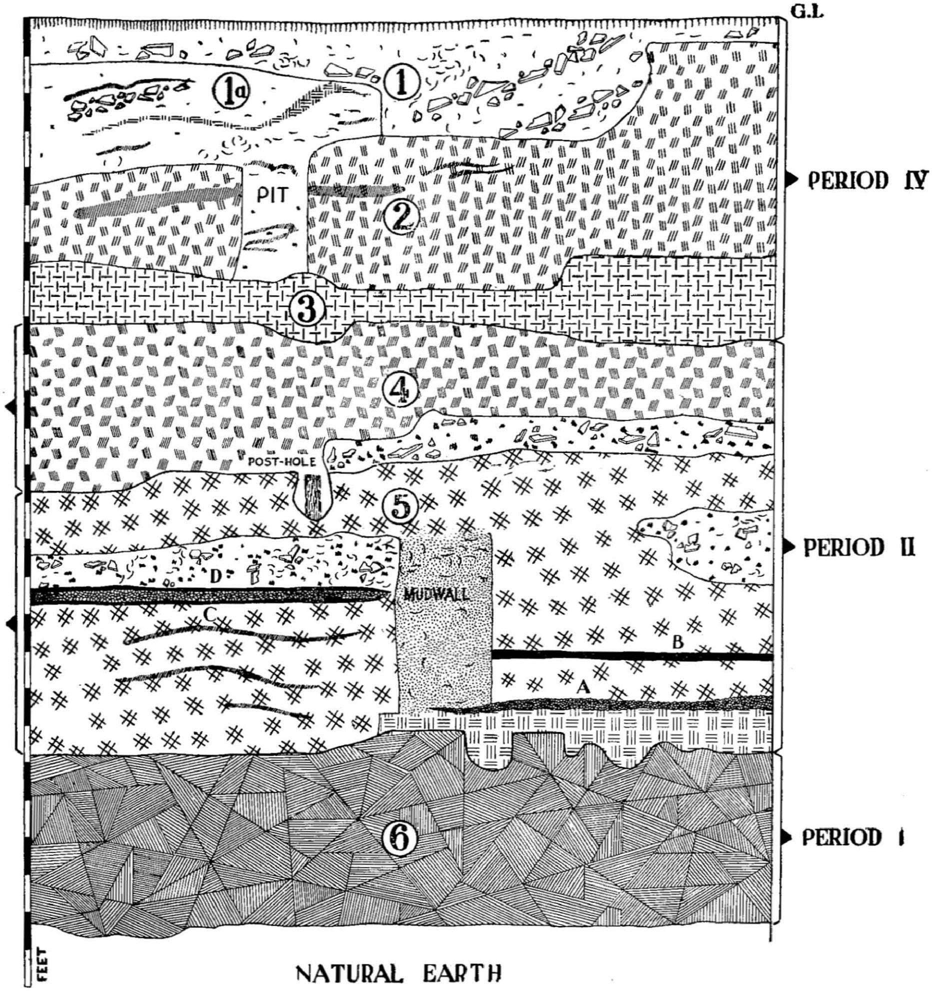
This was the main trench, measuring 40 feet NS × 20 feet EW. It was further sub-divided into A, B, C, D, E, F, G and H, each sub-trench being 20 feet by 5 feet. [Plan B and Section D].

After removing the top humus, a layer of debris was exposed in all these sub-trenches. This consisted of brick-bats, ash deposits, loose brown earth and pieces of charcoal. Its thickness varied in different sub-trenches. The second layer was thick and much disturbed. It consisted of greyish earth with large patches of ash, and a number of pits dug ostensibly for earth-grabbing. Its disturbed nature was shown by the heterogenous finds. Besides late (Muslim) glazed pottery, it yielded a sherd of N.B.P. along with several others of the red-and-black ware.[1]

Layer (3) of yellow brown earth, though steady in section facing north was absent in sub-trenches E, F, G and H. It was exposed in sub-trench A at a depth of 6 feet 7 inches and had a thickness varying between 2 feet to 2 feet 6 inches. It had extensive charcoal streaks. Along with the first two layers, this layer also gave a mixed stuff of late and early antiqui-

1. Information available from a local gentleman revealed that as late as 1907, this area was cultivated under millets. The blackness which a soil inherits due to vegetation in a field, was clearly exposed in the sub-trench G at a depth of about 4 feet 11 inches. When the cultivation was given up, the earth-grabbers who lived nearby at Kumbharwada took full advantage of the orphaned mound, and their devastation in taking out the finest earth and depositing the brickbats and other heavy stuff was clearly attested to by the first two layers.

SECTION: MAIN TRENCH
MATICHI GADHI NASIK
FACING NORTH



NATURAL EARTH

SECTION D

ties evidenced by three sherds of N.B.P., crude unburnished red ware and several sherds of the red-and-black pottery.

It was only with the fourth layer, consisting of dark grey earth, more compact than the top three layers, that some definite evidence of habitation could be had. This layer, exposed at a depth of nearly eleven feet from the surface of the trench, contained a thick debris of burnt clods of clay, as also fragments of bricks. Some intact bricks were also exposed lying at random in the section facing north. It yielded as many as ten sherds of N.B.P., cast copper coins, a comparatively larger quantity of black-and-red ware and several inscribed potsherds. These finds help to date the occupational debris of about 1-1/2 feet which was also marked by a post-hole containing pieces of disintegrated wood on the eastern edge, to a period slightly later than the series of occupational phases exposed in layer (5) below.

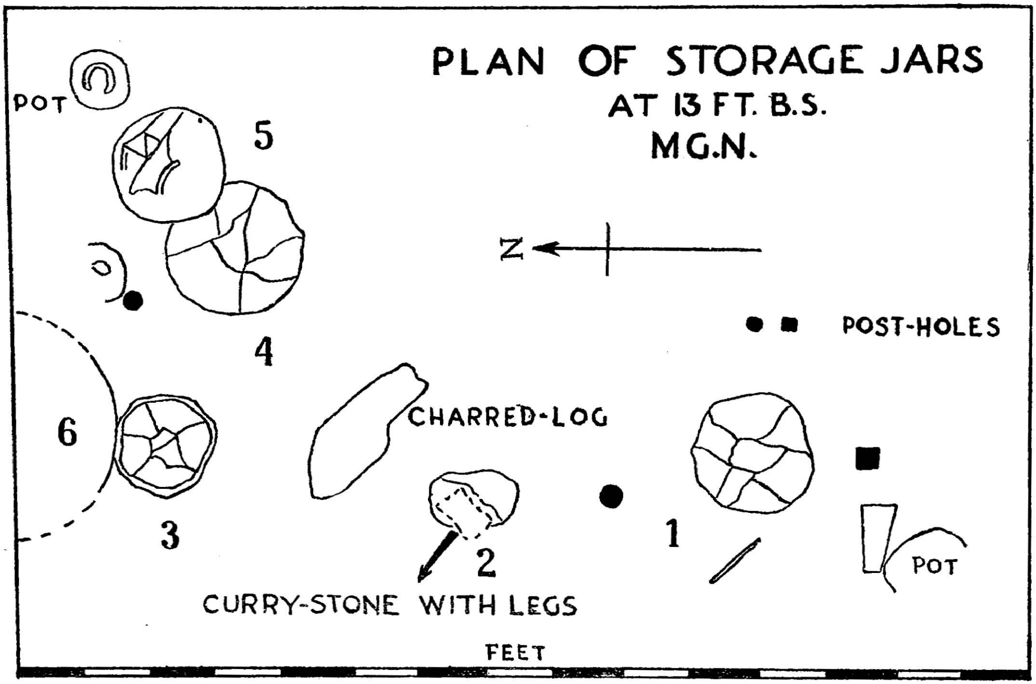
The fifth and the most important layer was exposed at a depth of about 13 feet from the surface in sub-trench A. It consisted of dark brown earth and had a somewhat uniform thickness of about seven feet in all the sub-trenches. There were extensive patches of ash, charcoal and burnt clay, suggesting a house fire. Even the pottery had suffered from this calamity.

This layer exposed four phases of occupation and three floor-levels.

Habitation (d)

This—the latest phase of occupation in this period—was exposed at a depth of 15 feet 2 inches (Section D above). It was characterised by the debris of a thickness of nearly one foot over a floor-level made of a layer of green *murum* and sand, sandwiched in between a pair of compact black clay layers to give it a firm base. To the western edge of this floor-level was exposed a portion of a mud wall of compact whitish clay mixed with potsherds. It had a thickness varying between 2 feet 6 inches to 2 feet. Along with potsherds as many as five crystal beads were also recovered in this wall.

Not less than six storage jars (*Rānjaṇs*)—three with rounded bottoms and the rest tub-shaped—were exposed in this habitation (Plan E). Along with ash and charcoal, these jars yielded burnt potsherds and clods of clay. An intact, large, log of wood burnt down to charcoal was also found lying nearby. It was evident, therefore, that the whole habitation was destroyed by fire.



Plan E : Plan of Storage Jars at 13 feet B.S. MG.N. (I) page 11.

The position of the mud-wall running in an oblique E-W direction, with an arm extending at right angles in the middle of it towards the south, indicated the existence of two hutments, possibly contemporary,—one to the east and the other to the west [Section D].

Along with these structures, a pair of ring-wells or soak-pits was exposed in this layer at a depth of 14 feet 6 inches in sub-trenches F and G. Both of these were sealed by layer (4).

Habitation (c)

Immediately below the floor-level of habitation (d) was exposed another floor-level consisting of a black clay layer of about two inch thickness, overspread by a layer of green *murum* and sand of one inch thickness. These two were covered with a bed of black compact clay. The process of making the floor-levels, therefore, was the same in habitations (c) and (d), even though the former seemed to have been earlier. However, the

time gap between these habitations does not appear to be much. It is quite likely that the occupants of habitations (c) and (d) were the same, and that those of the latter simply raised up or re-made the previous floor-level of habitation (c).

Habitation (b)

Still earlier habitation was exposed at a depth of 17 feet 6 inches from the surface of the trench, and 2 feet 4 inches below the floor-level of habitation (c). This habitation (b) was characterised by a floor consisting merely of a bed of rammed black sticky clay, about 2-1/2 inches thick, but much disturbed in almost all the sections. Around it there were extensive patches of ash and charcoal. A thick debris of burnt clay was exposed in the section facing east belonging to this habitation.

It was interesting to note that the mud wall which was exposed along with habitations (c) and (d) was present in this phase also. It was detected towards the eastern edge of the floor-level (b). Remarkably enough, the percentage of potsherds etc. found in this wall, at this level, was much less than that found at the habitation levels (c) and (d). It is probable, therefore, that the habitants of (c) and (d) in their attempt to raise the old wall up, used the material of the earlier habitation (b). That this wall belonged to habitation (b) was further evidenced by the fact that it rested on the hard surface of a still earlier habitation (a). It was but natural that when the people of habitation (b) wanted to erect a wall they thought it unnecessary to have a more firm foundation for the wall as they struck the floor-level of a previous habitation (a). [See Section D].

Habitation (a)

At a depth of 19 feet 6 inches from the surface of the trench, and 2 feet below the floor-level of habitation (b), was exposed a still earlier habitation indicated by a floor-level made on top of the sixth layer consisting of a very compact, sticky black soil. This floor was made by spreading a layer of greenish *murum* and sand over a raised black clay platform,—the thickness varying between 1 to 3 inches. Thus, this was the earliest occupation in layer (5).

All these four habitations (a, b, c and d) could be roughly dated on the basis of the find of thirteen N.B.P. sherds—the number being the maximum as compared to the quantity of similar sherds obtained in upper

layers. Thus the fourth and the fifth layers which yielded ten and thirteen N.B.P. sherds respectively, besides a large quantity of black-and-red and ordinary red pottery, seem to have been earlier and later phases of early historical period—the earlier phase (IIA) (layer 5) characterised by a quick succession of as many as four habitations, while the later phase (IIB) (layer 4) denoted by only one habitation debris.

Habitation of the Proto-Historic Period

The sixth layer consisting of dark, compact, sticky black clay was exposed at a depth of 20 feet 4 inches in some places. Its thickness of 4 feet 6 inches was more or less constant in sub-trenches A, B, C and D where it was completely dug out.

The finds of this layer were microliths, painted pottery and a large amount of ochre-washed ware. No N.B.P. or red-and-black sherds were found in this layer. Thus, this was the earliest occupation phase on the mound. Our excavations were not extensive enough to give an idea of the nature of the habitation.

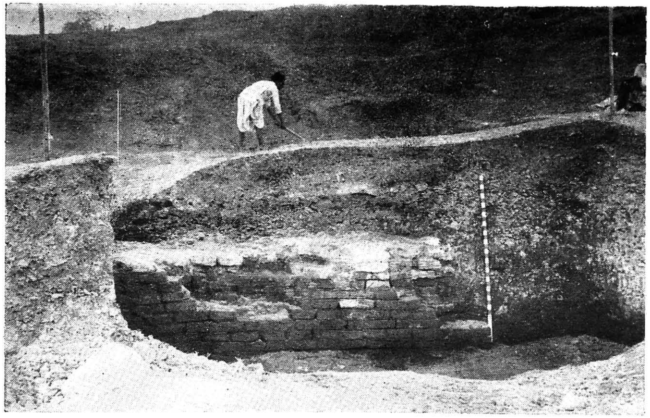
Natural earth which consisted of yellow silt was exposed at a depth of 25 feet 2 inches.

MG.S.N. (II)

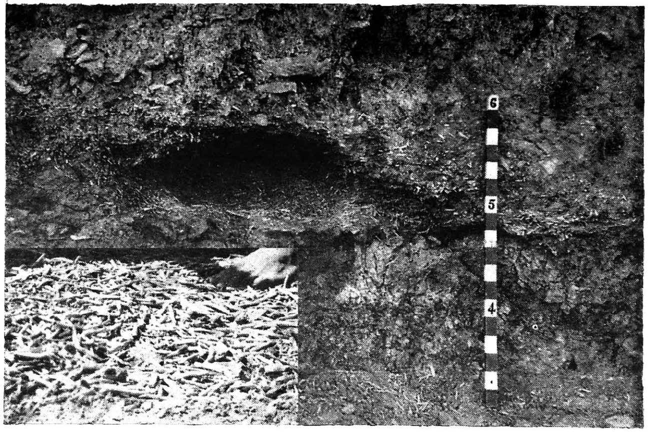
This trench, as remarked elsewhere, was laid in order to know the nature of the circular brick structures.

Out of the three structures which were included in the lay out of the trench, the middle structure was built with smaller bricks and was of a circular shape [See pl. IVc]. The bricks were wedge-shaped, having their measurements 6-1/2 inches × 5-1/2 inches × 4-1/2 inches with a thickness of 1-3/4 inches. There were 15 bricks in one course and there were 168 courses from the bottom to the top. The bricks were so arranged as to have their narrower end inside and the broader outside. The outer diameter of the structure was 3 feet and the inner 1 foot 9 inches. The structure when fully exposed and broken was seen to rest on a compact yellow silty earth at a depth of 28 feet below the present surface. This layer was the same as the natural earth found in MG.N. at a depth of 25 feet 2 inches.

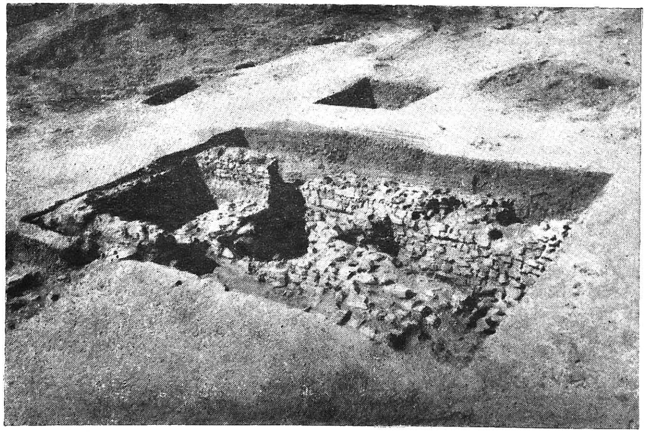
The layers here differed to some extent from those exposed in MG.N. The lowermost layer was of yellowish silt. The fifth layer having a thickness



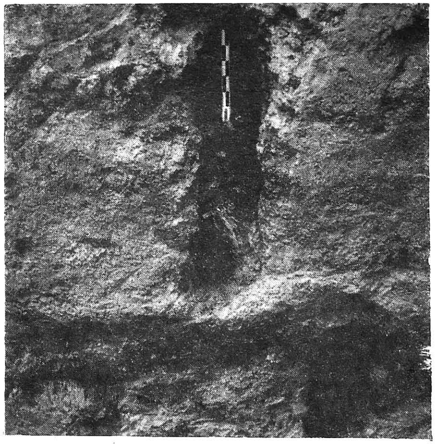
(a) **Brick** wall (Period II-III) on the Kumbharvada Mound, Nasik. (*See p. 18*)



(c) Layer of bone-points, K.W.N. Inset showing close-up of the same. (*See p. 6*)

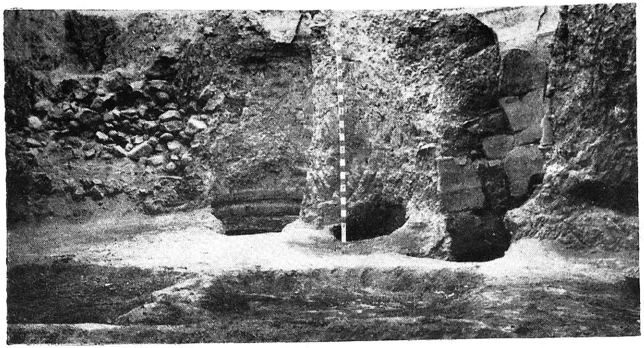


(b) Remains of rubble stone walls, (Period IV), MG.E.N. (III). (*See pp. 16-17*)

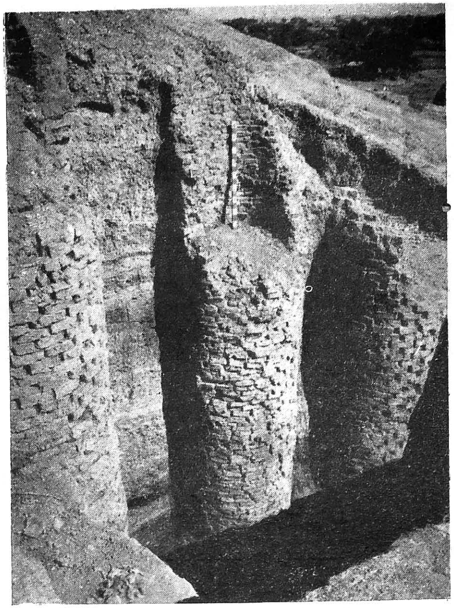


(d) Post-hole with disintegrated wood in layer 4, MG.N. (I) (*See p. 24*)

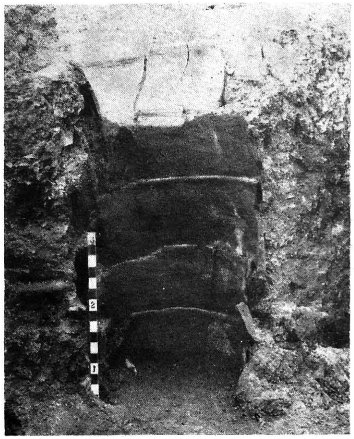
PLATE IV



(a) Brick and ring-lined 'wells' in MG.N. (I). Period II (A). (*See p. 23*)



(c) Three brick-lined 'wells' in MG.S.N. (II). (*See p. 14*)



(b) Close-up of a ring-lined 'well'. Period II (A). (*See p. 23*)

(d) Section of a brick-lined well in MG.S.N. (II). (*See p. 15*)

of about nine feet consisted of yellowish brown earth which was totally devoid of pottery or other finds.

Above the fifth was the fourth layer nearly four feet in thickness and having jet black soil similar to that constituting the sixth layer in MG.N. This yielded a few painted potsherds and microliths.

At a depth of about 7 feet from the surface, layer (3) consisting of dark brown compact earth was exposed. It had a thickness of nearly 1-3/4 feet.

The second layer, however, was less compact and whitish brown in colour. It had a thickness of about 5-3/4 feet with extensive patches of charcoal and ash.

The top layer was full of debris consisting of brickbats. It yielded pieces of the red-and-black ware.

The purpose of these structures could not be determined even after breaking open two of them. The fact that these were built by inhabitants later than those of Period II could be ascertained from the fact that the layers exposed behind the brick-structures were undisturbed [pl. IV d]. They were the same as those outside or adjoining these structures. The fact must be that the builders of these dug out a circular pit of 3 feet diameter, from the top to a depth of 28 feet, and then they built the structure from the natural earth to their topmost contemporary layer. It is quite possible that they used the same earth which came out of the pit for erecting the structure. This conjecture can also account for the presence of the red-and-black ware inside the structure as well.

MG.N.N. (III)

This trench [Plan B], which was laid out to determine the nature of a projecting brick-structure, exposed the topmost layer consisting of clean brown earth probably washed out from higher parts of the mound. Below it, at a depth of 2 feet 9 inches, was exposed the second layer full of brickbats and potsherds. The layer (2a) was full of stone rubble in the southern half of the trench, and had profuse fragments of potsherds in the northern half.

A very much disturbed layer (3), consisting of dark brown earth was exposed at a depth of 7 feet from the top, and it had extensive ashy

patches. Right in the middle but below this layer was found a big pit with a flat base, a width of about 4 feet to 6 feet and a depth of 4 feet. It was sealed by layer (3). [Section F].

The (3a) layer had extensive patches or bands of black sticky earth and of ashy stuff. A post-hole was exposed at the southern corner of the bottom of the pit. This post-hole ran even one foot below the base of the pit and was about 6 inches in breadth.

The level of the lowest course of the brick structure, at right angles to this section, when projected on this section struck the middle of the pit. The fourth layer consisted of dark sticky clay similar to that in layer (6) of MG.N. and (4) of the MG.S.N., and yielded microliths and painted pottery.

Thus in MG.N.N. also, two periods of occupation could be noticed. The earliest was that of layer (4) denoting the microlithic phase. The second and later period evidenced by the brick-structure of five courses of bricks could be ascribed to Period II. It was a very small squarish structure.

The natural earth of yellow silty nature was exposed at a depth of 15 feet 9 inches in this trench and was similar to the natural earth exposed in MG.N. and MG.S.N. at a depth of 25 feet 2 inches and 28 feet respectively.

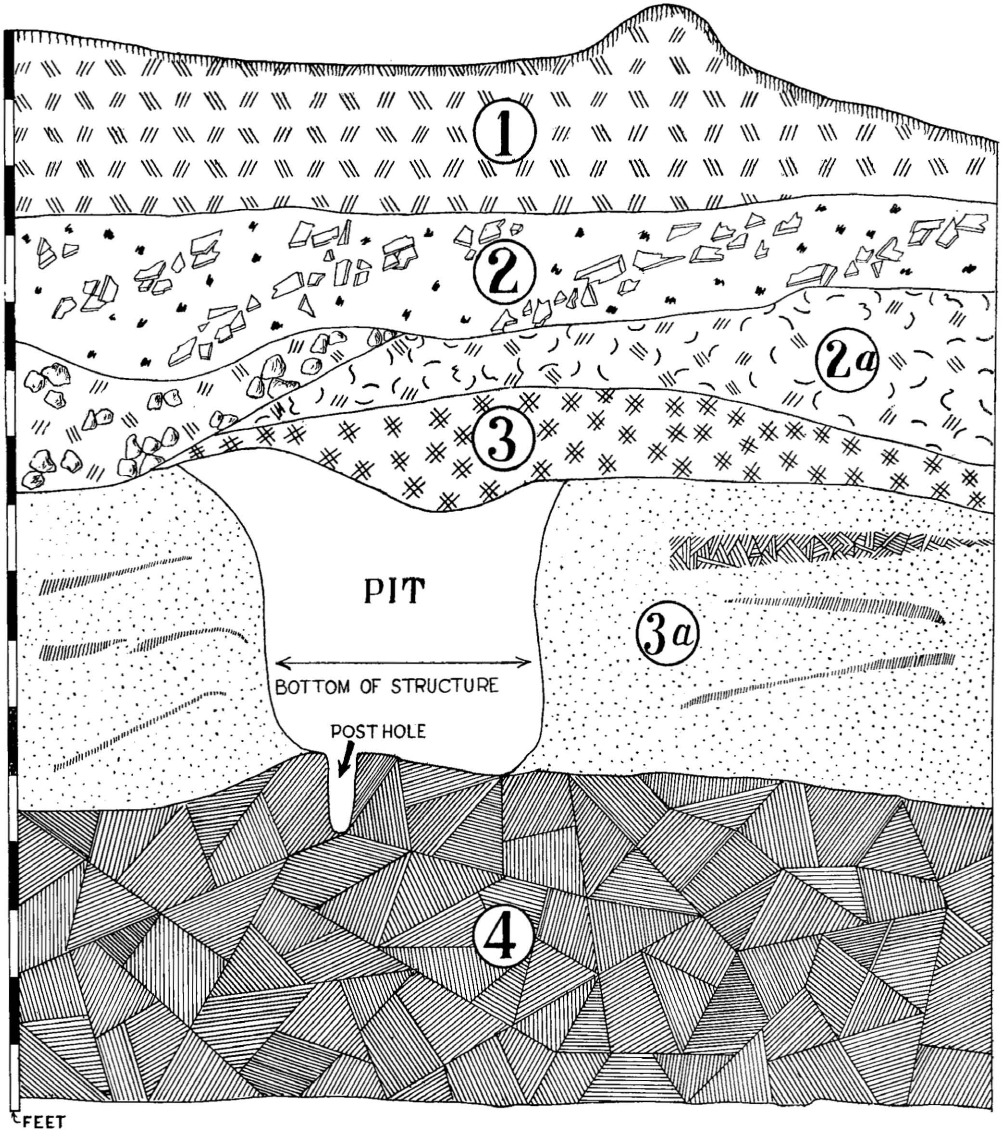
MG.E.N. (IV)

The original plan was to have a long trench (called Tr. I) 10 feet × 110 feet sub-divided into eleven sub-trenches of 10 feet × 10 feet and called as a, b, c, d, e, f, g, h, i, j and k. Out of these, however, only Ia, Id, Ie and Ik were excavated. [Plan B].

Digging the top layer consisting of whitish brown earth with brick-bats to a depth of about 9 inches from the surface, in trench Id, a stone wall (wall 'c') was exposed. It consisted of stone and rubble and small boulders of conglomerate. Both these were cemented in sticky brown clay, but the latter was found to be very loose.

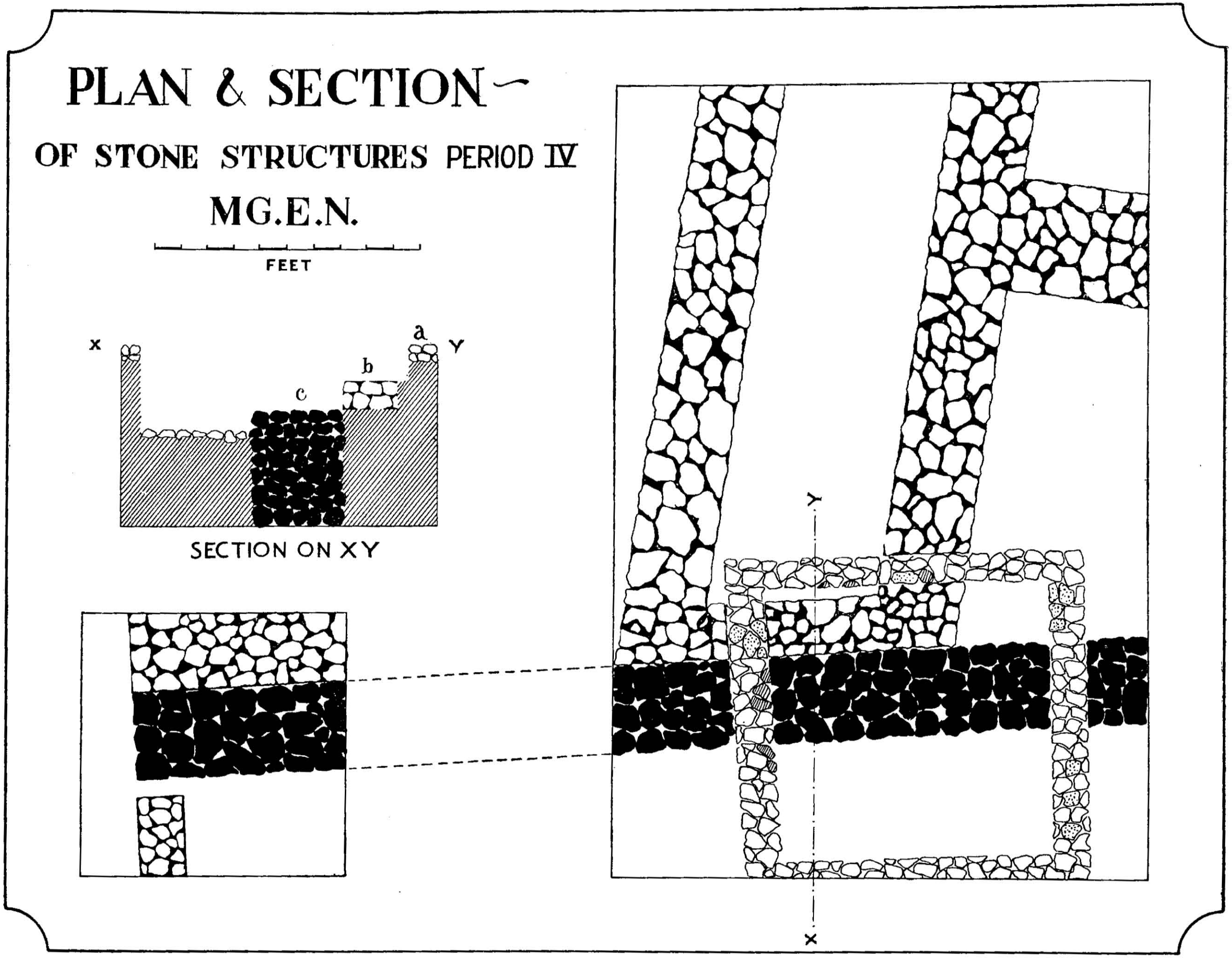
Digging further to a depth of two feet from the surface of the trench, still another wall (wall 'b') running under the top wall 'c' was exposed. It ran in a slightly oblique N-S direction. It was noticed that the founda-

SECTION: MG.NN
FACING EAST



SECTION F

PLAN G



PLAN & SECTION
OF STONE STRUCTURES PERIOD IV
MG.E.N.
FEET
X
Y
a
b
c
SECTION ON XY
Y
X

tion stones of wall ' c ' rested on this wall. Extending the trench 20 feet towards north (named as Ext. I), it was found that this wall ' b ' ran to a distance of nearly twenty feet towards the north and some twenty to thirty feet to the west. It was a rectangular structure with the breadth of the wall ranging between 3 feet 6 inches to 2 feet.

The third and the earliest structure in this trench was exposed at a depth of 3 feet below the surface. It consisted of a broad stone wall (wall ' a '). [See Plan G]. It ran east-west to a length of about 30 to 32 feet. Its breadth was nearly 3 feet. No extensions of it either northwards or southwards were found. Glazed Muslim pottery and a coin of Akbar helped to assign these structures to the Muslim period. [pl. IIIb].

Digging in the sub-trench Ie, immediately to the east of Id, upto a depth of 24 feet, revealed a series of oblique layers sloping towards the south showing that the mound then had probably a different contour as compared to its present one. The top layer (1)—just by the side of the topmost wall ' c ' exposed in Ie which seemed to end in this sub-trench—consisted of loose whitish brown earth full of brickbats and pebbles, showing probably the washed out material of the structure. The layer below, (2) consisted of brownish earth with less brickbats. This layer broadened towards the east. Layer (2a), consisting of a broad ashy patch, was very irregular, nearly one foot in thickness, and was light grey in colour. It indicated that there was possibly a human occupation nearby and that the ash was deposited as a dump here by the inhabitants.

At a depth of five feet from the surface, a very thick layer (3)—nearly four feet in thickness—consisting of brown earth full of kankar was exposed. The layer below i.e. (3a) consisted of ashy-yellow stuff of a thickness of nearly one foot. It ran obliquely. The fourth layer continuing to a depth of 24 feet—from the 10th to the 24th foot from the top of the trench—was full of dark brown earth with kankar. The latter, however, decreased below 22 feet.

In sub-trench Ik, nearly forty feet to the east of Ie, alternate layers of sticky chocolate-coloured earth and loose brown earth were exposed. The stratification here seemed to be much disturbed on account of the washed out material from the top of the slope, as also due to the rubble deposited here while making the modern road. [See Plan B].

K.W.N.(V)

A reference has already been made to the chance discovery of a wall on this mound. As the deposits of earth above the wall were already removed by earth-grabbers, it was not possible to know the stratification lying on top of the wall.

As for the wall, it ran east-west and had 10 to 11 courses of bricks. These measured 1 foot 10 inches in length, 11 inches in breadth and 3 inches in thickness. No extension of the wall either south or northwards could be detected. The wall ran to a distance of more than 15 feet eastwards, and was possibly the remnant of a big structure.[pl. IIIa].

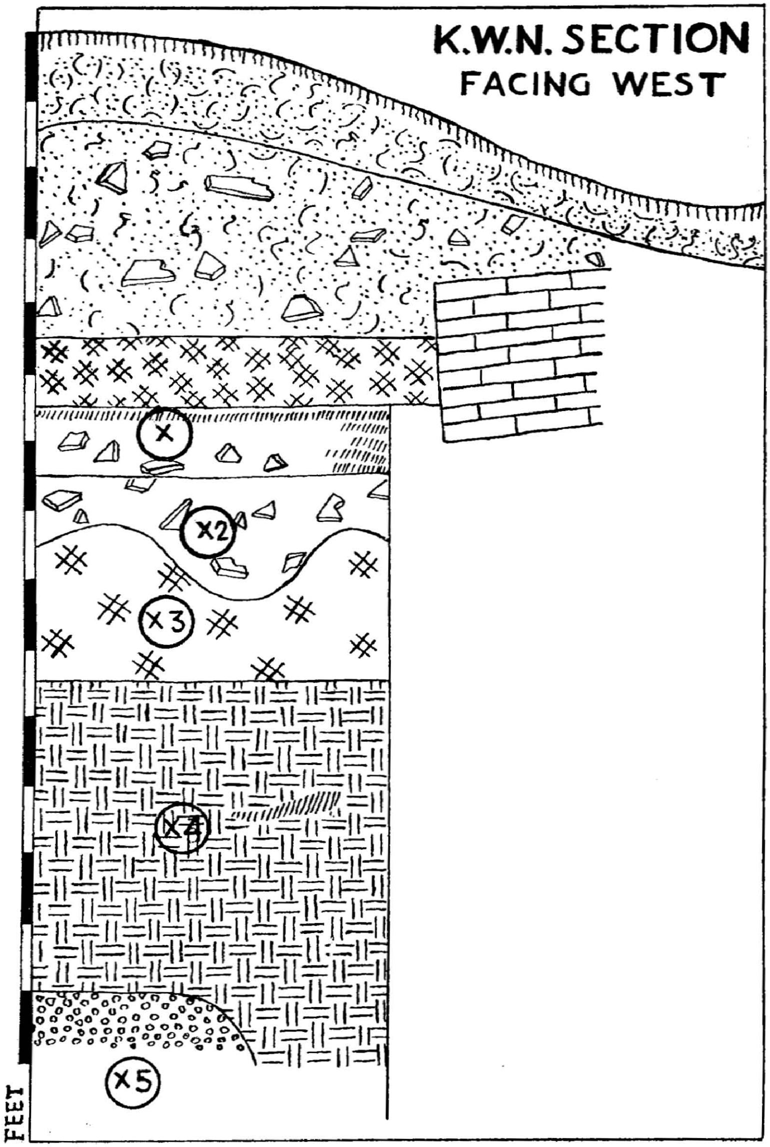
The trench adjoining the wall but to the south of it was 15 feet × 20 feet and the one to the north 10 feet × 10 feet.

In the northern trench, the topmost layer consisted of debris of brickbats and potsherds upto a depth of 1 foot 6 inches. The second layer, nearly of the same thickness as that of the top one, was of the same stuff but had less potsherds and more brickbats. Below it was exposed a stratum of compact dark brown earth and it was in this layer that the foundation trench (9 inches broad and 1 foot deep) for the wall was detected. It was made with pebbles and compact clay to give stability to the structure above. The pottery found in association with this structure was red-and-black.

As already noted, the first three layers were partially cut off in some places by the earth-grabbers. Below these, a somewhat undisturbed layer (X) consisting of ash, brick pieces and charcoal fragments yielded black-and-red pottery, even below the wall. Layer (X2) was a patch of charcoal dust and yielded some burnt fragments of pottery. The next layer (X3) going to a depth of 9 feet 6 inches consisted of soft granular brown earth, and the nature of the pottery was the same.

The last layer (X4), formed of deep chocolate-coloured earth with profuse patches of blackish ash, rested right on gravel sloping towards the north from the south. Gravel was exposed at a depth of 14 feet below the surface of the trench.

The stratification in the trench to the south of the wall was extremely disturbed, and most of it was gulped up by the presence of a big pit full of



SECTION H

pottery dump and small stones. The gravel here was exposed at a depth of 8 feet from the surface. That means that the gravel layer takes a dip of nearly six feet towards the north. The pottery yielded in the top layers was the usual red-and-black along with a few sherds of the red polished ware.

From the strata exposed in the northern and southern trenches in relation to the wall, the following observations could be made. [Section H]

(i) The presence of the gravel indicates that the course of the river Godavari might have been over this region in the remote past—or, more precisely, the river might have been flowing in the southward old bed and that it has changed its course now, cutting out a new channel.

(ii) The earliest occupation here took place in the historical period. This, from the nature of the finds, may be assigned to Period IIA.

(iii) Much later, but during the early historical period, a brick structure was erected on the debris of Period IIA. This, from the associated finds, may be placed in Period IIB-III.

(iv) A regular cultural sequence of human occupation could not be had on this mound, as it is extremely disturbed.

Structures of Various Periods

It will be clear from the details given up till now that there were four periods of occupation at Nasik. It will, therefore, be interesting to see how the occupants in these various periods lived and what sort of houses they occupied.

Period I : Proto-Historic

Besides microliths and painted pottery, no evidence was available to say about the nature of the habitation in this period. This may be had when more extensive excavations are undertaken.

CONCORDANCE AND CORRELATION OF VARIOUS TRENCHES AT NASIK

PERIODS	TRENCHES MG.N.(1)	MG.E.N.(IV)	MG.S.N. (II)	MG.N.N.(III)	K.W.N.(V)	Approximate Dating.
MUSLIM-MARATHA Period IV	(1) Debris (2) Grey earth & brickbats. (3) Yellowish brown earth.	(1) Loose whitish brown earth with brick-bats and pebbles. (2) Brownish earth with less brick-bats. (2a) Broad ashy patch. (3) Brown earth. (3a) Ashy, yellow earth.	(1) Debris. (2) Whitish brown earth.	(1) Clean brown earth. (2) Brown earth with brick-bats. (2a) Stone rubble		c.1500 to 1800 A.D.
ROMAN CONTACT Period III.		(4) Ashy brown earth with kankar.			(1) Debris with potsherds.	c. 3rd-1st century A.D.
Period IIB. (EARLY HISTORIC)	Dark grey earth.	—Not dug—		(3) Earth with ash patches.	(2) Debris with less potsherds. (3) compact dark brown earth.	c. 1st century A.D. to 3rd century B.C.
Period IIA. (EARLY HISTORIC)	(5) Dark brown earth.	do.	(3) Dark brown compact earth.	(3a) Blackish earth with ash.	(X) Ash and brickbats. (X2) Charcoal dust. (X3) Soft brown earth. (X4) Deep chocolate coloured earth.	c. 3-5 century B.C.
GAP						
MICROLITHIC WITH PAINTED POTTERY Period I.	(6) Sticky black clay.	do.	(4) Sticky black clay.	(4) Sticky black clay.	Gravel bed.	Before 500 B.C. to probably 1000-1500 B.C.
NATURAL EARTH	(7) Yellowish brown earth	do.	(5) Yellowish brown earth.	(5) Yellowish brown earth.		

Period IIA : Early Historic

While describing the layers, reference was made to the various floor-levels and a mud wall, all comprised within layer five. Though the area dug by us was not large enough to give a complete plan and idea of the structures existing at various phases in Period IIA, an attempt may be made to view the evidence as a whole.

It appears that the earliest settlers in this period lived in mud huts. The walls of these were made of brownish clay, and an even, firm floor of sand and green *murum* (top layers of disintegrated trap rock). This rested right on the black soil. The roof of these huts was probably supported by wooden poles and rafters. But, whether it was covered by tiles, kept in position by iron nails, cannot be said, for though no such tile was found, a number of long nails was recovered at this depth.

Partial remains of two such huts were laid bare, one was in the eastern and the other in the western half of the trench. These huts were separated by a common mud wall running slightly oblique but in N-S direction.

These huts were probably destroyed by fire, but were soon rebuilt by the same inhabitants or others. The ground level was slightly raised by making a new floor with black earth. The orientation of the huts remained as before. The old partition wall of mud was raised. But instead of making it with pure clay and straw, potsherds of possibly an earlier habitation were mixed in the clay to serve as a binding material. The wall was nearly two and-a half feet thick and ran in the north-south direction and rested on the floor-level of phase (a). The absence of any floor-level or remnants of a mud wall in the northern sub-trenches D to H at this level, suggested that the occupants used only the southern portions of the MG.N. covered by sub-trenches A to C.

As in the case of the earlier one, this habitation (b) also seems to have been destroyed by fire, as was evidenced by the presence of large patches of ash and charcoal around the floor-level. It seems, therefore, that the structures of phases (a) and (b) met with a common cause of destruction viz. fire.

Soon, however, the site seems to have been resettled. This is testified by the floor-levels of phases (c) and (d). As remarked elsewhere, it is quite

likely that the occupants of these two phases were the same or that there was an insignificant time gap between the two. In the latter case it is likely that the people of phase (d) remade or thickened the floor-level (c) which they themselves or some earlier occupants might have made a little earlier. The technique of floor making seemed to have been more advanced than that at the time of phase (b), for, instead of spreading a single layer of compact black clay as done by people of (b), the occupants of phases (c) and (d) sprayed sand and *murum* in between a pair of layers of black sticky clay.

Like the earlier occupants, these people also lived in mud huts as they seem to have raised the previously existing mud wall. It seems that in doing so they used clay with more potsherds. This was attested to by the occurrence of a greater quantity of potsherds in the wall at this level than that in lower levels. That they used grass or hay as binding material could be seen from the contents of the one foot debris on the floor level. This mostly consisted of charred lumps of clay, also containing burnt grass.

The position of the floor level and the raised mud wall enclosing it towards the west, indicated that the occupants lived mostly in the eastern apartment. Even though traces of these floor-levels (c) and (d) were not clear in the western half of the section facing north, some patches of the same could be had in other sections, especially in the section facing east. It seems, therefore, possible that the portion or the apartment towards the east was used for better domestic purposes, while the apartment towards the west was either a kitchen or a workshop. These two possibilities could be inferred on the basis of the recovery of as many as six storage jars, a number of iron weapons such as knives, spear-heads and arrow-heads, several bones and animal teeth, an intact but burnt jaw of a pig, and an entire log of burnt wood. It is quite likely that the occupants were either hunters or makers of metal weapons, and that though probably Buddhist, they were non-vegetarian. This could further be corroborated by the discovery of several shells of the types 'Viviparus bengalensis' and those of 'Lamellidens' and 'Parreysia,' the animals of which are even today used as food.

The purpose of the storage jars was not clear as all of them yielded ash, charcoal and a few burnt potsherds. Of the six, three had rounded base and the rest were tub-shaped. The largest of the lot had a diameter of 3 feet 5 inches and a thickness of about one inch. It had no base as such,

as *murum* and black clay formed its base. Finger impressions on these vessels suggest that they were handmade.

From the large amount of ash, burnt wood, charred pottery and other objects, it seems likely that this habitation was also devastated by fire which can easily take place in a workshop. And in this fire, the inmates left hurriedly leaving behind their storage jars, weapons, and their huts with wooden poles, evidenced by the traces of disintegrated and burnt wood exposed in postholes near this floor-level. It seems that the fire was more destructive in the western half, as a huge debris of burnt material was exposed in section facing the east. It seems also probable that the onslaught of the fire was to some extent checked by the middle north-south mud wall which, when under fire, collapsed on the floor-level in the eastern half causing less damage than that in the western apartment.

Ring-Wells

Along with these remains, a pair of ring-wells or soakpits was exposed in sub-trenches E and F, i.e. towards the north of these hutments of phases (c) and (d). They were exposed at a depth of 14 feet 6 inches below the surface—practically at the same depth as that of the floor-level (d). The wells were situated at a distance of three feet ten inches from each other.

The well to the east had larger pottery rings, having grooves at both ends. The groove at the lower edge was fitted in the upper edge of the lower ring. [pl. IVa, b]. Fifteen such rings were exposed. The total depth of this well was 16 feet 3 inches and it rested right on the natural earth.

The well to the west had smaller rings with only one edge flattened and protruding on one side. Originally this well seemed to have thirty-two rings, of which twenty were extant. The total depth of the well was 14 feet 4 inches. It rested on the virgin earth.

That both these wells were not in use after the Period IIA was clear from the fact that these were sealed by layer (4). They were most probably not used also by the occupants of the hutments of phases (c) and (d) lying southwards, could be presumed by the east-west position of the mud wall which might have blocked the way to these wells. It could also not be said that both these wells were dug at the same time. For, the well to the west had two sets of rings. The lower ones were intact and smaller than those of the adjoining well. This original well was probably raised up for use as was

seen by the presence of bigger rings stuck up on the upper portion of the well to the east. Thus the makers of the well to the east seem to have added the rings of the adjoining western well by using bigger rings similar to those of the eastern well.

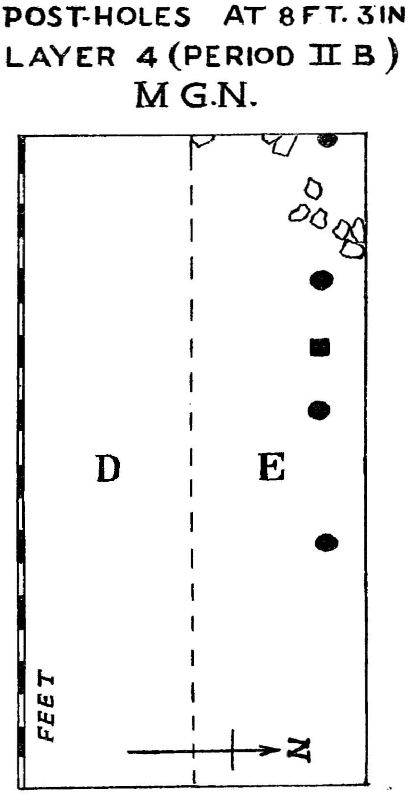
Naturally the question arises as to who used these wells. As remarked above, the occupants of the mud hutments to the south did not seem to use it, as the passage was probably barred by the east-west mud wall. The answer to this was provided by the debris of burnt stuff found in trenches F and G. Though no clear floor-level was found here, yet signs of habitation were evidenced by postholes, probably of a structure contemporary with these wells. The former contained disintegrated wood. Thus, it might be concluded that these wells were used by the occupants living in the area covered by the trenches F, G and H and were contemporary with the people of phase (d), living towards the southern quarter in mud huts, the remains of which were found in trenches A, B, C and D.

Another point worth notice was the presence of several stones dumped quite close to the well on the western side. It may be that at the time of raising the original well with smaller rings, the occupants nearby might have deposited the stones as an embankment against the rings or as an approach to the wells.

Since these wells yielded a large amount of intact pottery, along with other decomposed material it seems that they were principally used as soakpits.

Period II B

Except for a thick deposit of debris of clods of burnt clay and several postholes, no other evidence of any structure could be had. From this, however, it could be surmised that the occupants of this period also seem to have lived in mud huts supported by wooden posts. Remains of the latter were detected in a posthole [pl. IIId]. Probably there were more than one hut at this level. For a series of five postholes was located in sub-trench F. [Plan I]. It seems, therefore, that there were contemporary huts, some to the south as revealed in sub-trenches F and A respectively. However, in none of these, evidence of a floor was available. It is quite likely, therefore, that these habitations were of a temporary nature, or that the occupants here were too poor to make a well-fashioned floor-level and hence they were satisfied with a roof overhead.



Plan I

At about the same time or probably slightly later, there existed brick structures on the northern (MG.N.N.) and southern (K.W.N.) sides of the main mound. The former overlooked the river and possibly was a wall of a very small room. The measurements of the bricks were 1 foot 6 inches × 11 inches × 4-1/2 inches. No extensions further than four feet in length and only one and a half feet in breadth could be had. These were not sufficient to arrive at any definite plan of the structure.

Similar was the case with the long brick structure exposed at K.W.N. Here also no extensions either southwards or northwards of the wall were found. The wall seemed to run only east-west. From the measurements of the

bricks (1 foot 10 inches × 11 inches × 3 inches) it seems likely that the wall was used probably as a barricade or as a protective enclosure.

The large amount of debris lying nearby and over it, however, indicated that besides this wall there were houses of bricks on this mound (K.W.N.), which were roofed with rafters and tiles fixed with iron nails as a number of these were recovered. The tiles were such as could be fixed in the adjoining ones on account of grooves, and had holes through which nails were inserted and stuck into the wooden rafters below.

The nature of the structures—of Periods IIA and IIB, as well as their principal contents—large storage jars sunk into the floor, other pottery vessels, a few inscribed sherds, several iron implements and very few ornaments or valuables suggest that the residents were probably poor, and perhaps Buddhists. They ate meat and pork but what they were by profession cannot be conjectured. But, as remarked elsewhere, they were probably ironsmiths or hunters as suggested by the recovery of implements, big burnt storage jars and remains of animal bones.

Period III : Roman Contact

No structures of this period were extant. Only Roman or imitation Roman potsherds like the Samian, the Rouletted and Red Polished ware were recovered from MG.E.N. and the upper debris of K.W.N.

Period IV : Muslim-Maratha

Structural evidence of this period could be had mainly from the MG.E.N. trenches. Here, structures were found in association with a coin of Akbar and thus could be ascribed to the Muslim-Maratha period.[1]

As these structures could not be fully exposed, it is difficult to say as to what their plan was and to what purpose they were used. The structure (c), however, was of a rectangular shape (14 feet × 11-1/4 feet) and possibly was a room. There were no signs of any postholes. It was also difficult to say whether it was roofed with tiles as no such objects were found. The stones were cemented in mud which had become very loose. It is quite

1. A coin of Malhar Rao Gaekwad was also found on surface at MG.N. which provides evidence of occupation in the Maratha period. Hence Period IV has been called Muslim-Maratha.

likely that the inmates of the house were poor and hence they could not afford to use better material. There was no attempt of floor making either. It is also possible that the room or the structure was used for purposes other than those of a residence.

Slightly earlier than the structure (c), was the structure (b). It had two parallel wings running north-south. Remnants of two arms of the wall mostly at right angles but one running towards the east and the other towards the west, were also detected. The stones of this structure were larger than those of (c). They were cemented in mud and the wall had a thickness of about three feet. The purpose of this structure could not be determined, but it seems likely that it was not meant to be a house but to be a protective barrier to a big gate which, as the local tradition says, was there in the Muslim period.

Another habitation was evidenced by the wall (a). The technique of building it was the same, viz. cementing rubble stones in mud. It had a thickness of nearly 3-3/4 feet. Four stones were laid breadthwise. No other evidence that could throw light on the nature of the habitants of this structure could be had.

As compared to the inhabitants of Period II, the inhabitants of Periods III and IV have left practically no clue to their standard of life. The people of Period II lived in mud huts roofed with tiles and supported by wooden rafters, used storage jars, weapons etc. But no such details could be had in the case of people of Period IV, even though they seem to have given preference to stone walls rather than to those of mud. But these people seem to have been poor as the total absence of any valuables and ornaments shows. But one thing is certain, and that is the quick succession of habitations in both these periods.

III

CHRONOLOGY

The chronology of the strata and structures discussed above may be determined with the help of following evidence :—

I (i) Coins, and

(ii) Inscriptions on potsherds and other objects,

II Pottery,—including

(i) Northern Black Polished Ware, (N.B.P.),

(ii) Rouletted and Red Polished Ware,

(iii) Āndhra Criss-Cross Ware,

(iv) Glazed and Celadon Ware.

Though there is evidence that the region around present Nasik was inhabited by man during the Palaeolithic period, at or near the site of the excavation, no evidence of this kind has been found so far. The earliest occupation here seems to be on the top of the black soil. This itself was formed, presumably under very humid conditions, on gravelly silt deposited during an aggradation phase. Since the finds from this layer include only microliths, a painted and unpainted yellow-ochre washed pottery, and no N.B.P. or any other object of early historic period, this earliest occupation, separated by a weathered horizon, has to be assigned to a pre-N.B.P. period. The microliths include lunates or crescents, trapeze, straight edged and obliquely blunted blades. Some of the pottery is definitely wheela-turned, and among the rare grey-ware, one type [Fig. 3a] seems to be similar to the grey-ware urn-type of Brahmagīrī IB period.[1] This as well as the yellow ochre, painted ware and microliths have some distinctive types common with the similar material from Jorwe, (see below pp. 147-78) where low grade bronze celts and a copper bangle were also found. So this cultural stage may be placed in the Chalcolithic or Early Bronze Age. To assign any precise date to this period is not possible. Its duration may be from 1,500-1,000 B.C. to 500 B.C.

The second occupation took place after an interval of time. How much it was we cannot guess, but the surface on which it occurred is definitely weathered. The N.B.P. appears now for the first time. This is generally dated to the 4th—5th century B.C. But towards the later part of this period, in layer (4), occur two uninscribed Cast Copper Coins (See below p. 30), and two sherds (See below p. 85), which resemble the criss-cross Āndhra ware from sites in Karṇāṭaka (Brahmagīrī, Chandrāvallī, Herkal). So layer (5), in which the N.B.P. is associated exclusively with the black and black-and-red 'Megalithic' as well as the ordinary red ware, some bearing symbols which also occur on Silver Punch-Marked Coins, may be assigned to a period between 200-400 B.C. The limits of its later phase—Period IIB—are suggested by Āndhra criss-cross sherds and uninscribed

1. *Ancient India* (*Anc. Ind.*), No. 4 (1947-48), Fig. 20, T 37, p. 227.

Cast Copper Coins and the survival of the N.B.P., as between 200 B.C. -50 A.D.

The next phase seems to be absent in the main trench. But its presence is indicated by the occurrence of red-polished ware, some of it definitely of Roman origin, and the rouletted ware in the top layers of K.W.N., as well as in layers (3) and (4) of MG.E.N. It is worth recording that very little of the 'Megalithic' ware was found in these layers. Thus, both positive and negative evidence indicates a date later than the mature existence of the black and black-and-red and N.B.P. culture at these two sites. This will then be a period after 50 A.D. and extending probably for a century or two, that is, about 50 A.D.—200 A.D. The brick structures in K.W.N. and MG.N.N. might be placed in Period III or IIB.

The succeeding occupation phases are represented by a series of structural remains in MG.E.N., and mixed debris in MG.N. and K.W.N. In none of these there is an object which on stylistic or other evidence can be assigned to a period between 200 A.D.—1200 A.D. It is, therefore, presumed, for the present, that the site was abandoned during the mediaeval period. Resettlement took place under the Muslims. This is suggested not only by the presence of Glazed and Celadon wares and polychrome glass bangles but also by the discovery of a coin of Akbar below the wall of sub-period IV in MG.E.N. The occupation under the Mughals may have taken place towards the end of this period. If so, this period may have begun as early as 1400 A.D. and lasted through Akbar's and later Mughals' reign in the Deccan upto 1760 when the Marathas took Nasik from them. The close of this period is also attested to by a coin of Malhār Rāo Gāekwāḍ found just under the surface of MG.N. Thus in summary[2], the following tentative chronological sequence is proposed :—

Period I	—	Probably Chalcolithic or Early Bronze Age		c. 500 B.C.—1000—1500 B.C. or earlier.
Period II	—	A Early Historic	—	c. 200 B.C.—300—400 B.C.
		B Early Historic	—	c. 50 A.D.—200 B.C.
Period III	—	Roman Contact	—	200 A.D.—50 A.D.
Period IV	—	Early Muslim-Mughal Maratha	—	c. 1400 A.D.—1875 A.D.

2. In this the Early Stone Age Period is omitted for the reason mentioned on p. 6.

IV

COINS

Very few coins were found. Out of eight from the excavation, three are blurred and of little value. From the rest, three belong to the Early Historic period, one to the Mughal, and the fifth to the Gaekwads of Baroda. These help in dating, to some extent, and with other evidence, the layers from which they emanate.

1. *A Cast Uninscribed (?) Coin*

No. 199. MG.N.G (4). Depth 9 ft. [pl. V, 1. See also JNSI. Vol. XV, pl. VII].

Metal	Copper.
Size	Round, oblong, (17 mm. × 15 mm. × 2 mm.)
Weight	4.786 grammes (nearly 74 grains).
Obverse	There are two semi-circular raised signs on the left-hand border, a symbol like the tree in railing in the top centre; below it an incomplete rectangle, and a vertical line to its right.
Reverse	Now blank ; but there might be some symbol on the right-hand side, which is slightly broken.

If what looks like a symbol, does not contain any letters, (e.g. the vertical stroke may be compared to the Asokan '*pa*') then the coin might be placed in the category of 'Cast Uninscribed Coins.'

The grouping of symbols appears to be unique. Separately or in other combinations, parts of the large symbols described above figure in certain Tribal coins; for instance, in coins of Audumbara and Kuṇinda,[1] there is a vertical stroke with a loop at the bottom turning to the right and an empty rectangle, but there is no symbol on punch-marked, Cast Uninscribed, Tribal or other ancient Indian coins, where a symbol identical with the one on the Nasik coin seems to occur. On some Kausāmbī coins, as kindly pointed out by Shri P. L. GUPTA, occur a tree in railing, a thick wavy line and joined semi-circles. It is possible, as he suggests, that these, and what looks like an open rectangle are, indeed, parts of letters.

2. *A Cast Uninscribed Coin*

No. 189. MG.N.B (4). Depth 9 ft. 6 in. [pl. V, 2].

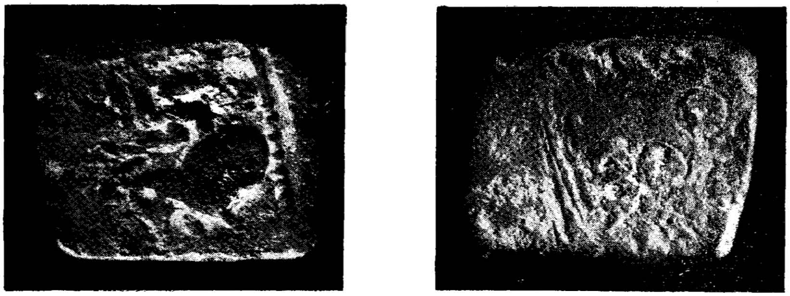
Metal	Copper.
Size	Round (though considerably broken) and thick. (Diam. 24 mm. Thickness 8 mm.)
Weight	9.528 grammes (147 grains).

1. ALLAN John, *Catalogue of Coins of Ancient India*, (*CCAI.*), pp. 127, 159.

2

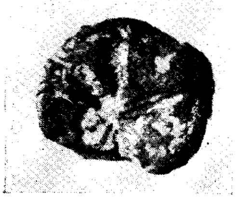
1

3



4

6



5

Coins : Cast Uninscribed Copper and Early Satavahana.

(*See pp. 30-33*)

The coin is so much corroded that it is peeling off in layers, and has a few cracks. Hence it was given up as useless but a careful examination on cleaning showed a *svastika* with curved arms, just above the centre, and to its left a symbol, the upper part of which resembles an open scissors. In the lower part of it again there is a fork, but only the right arm slightly curves in, while the left seems to be straight, unless it be connected with a wavy, serpent-like form to its left. From the arms of the upper fork, a bud-like object seems to emerge. This symbol, as kindly pointed out by Shri P. L. Gupta, after carefully examining the coin and its photograph, may be like the one published by Allan, viz. two semi-circles joined by a line thus , to the left of which we may discern a small taurine. It has, however, got to be pointed out that in the coin, the arms of the central symbol are angular and not rounded, as in a dumbell or in the symbol illustrated by Allan. The reverse appears to be blank. In the absence of writing, this coin may also be placed in the category of 'Cast Uninscribed Coins'. The *svastika* occurs but rarely on punch-marked coins,[2] but is a common feature of later ancient Indian coins. It also figures on some varieties of Andhra coins, where its arms are often straight and angular,[3] but not so rounded as in the present coin. Some of the tribal coins do, however, exhibit this variety.[4] On the Uninscribed Cast Coins also two of the arms of the *svastika* are rounded.[5] Stylistically the form of the *svastika* suggests an early date for the coin.

The other symbol, if it is correctly described, seems to be quite new—its upper part resembles the *sarpa-mithuna* symbol, but the lower is quite different. It does not occur on the Tribal, Uninscribed Cast or even on Punch-marked coins.

3. *Coin No. 483*

MG.N. D(3). Depth 5 ft. 2 in.

Metal	Copper.
Shape	Rectangular. (15 mm. × 13 mm. × 3 mm.)
Weight	3.161 grammes (about 52 grains).
Obverse	The symbols are blurred.
Reverse	Faint traces of the Ujjain symbol can be seen.

Not illustrated.

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2. Durga Prasad, *JPASB.*, XXX (1934), *Num. Suppl.*, pl. 2.

3. Rapson, *CAD*, pl. I, 5, 6, 9, 13, 15 ; pl. II, 26 ; pl. III, 47 ; pl. IV, 2 ; pl. VIII, 29-16, 227. *Cf.* also *JNSI.*, XII, pl. VIII, and XIII, pl. VI, 1, where the *svastika* appears very prominently on certain coins from Koṇḍāpur.

4. Allan, *op. cit.*, p. 308, pl. XIX, 2, 19.

5. *Ibid.*, p. 308, pl. XIX, 2, 19.

4. *Coin No. 5561*

MG.E.N. Ik(2). [pl. V, 6].

Metal	Copper.
Size	Rectangular. (13 mm. × 11 mm. × 2 mm.)
Weight	2.334 grammes (about 36 grains).
Obverse	Extremely faint traces of one or two letters like
Reverse	Blank.

5. *Coin (?) No. 5060*

MG.E.N. Ie(3). [pl. V, 5].

Metal	Lead.
Size	Round. (Diam. 13 mm. × 3 mm.) partly broken.
Weight	2.577 grammes (about 39-½ grains).
Obverse	A cross or lotus leaf-like incisions.
Reverse	Blank.

6. *Coin No. 860*

MG.E.N. Ie(2). [pl. V, 3].

Metal	Copper.
Size	Squarish. (.65 in mm.).
Weight	5.349 grammes (82-½ grains).
Obverse	Elephant facing right (trunk cut off); above faint traces of Ujjain symbol, and perhaps some letters, now obliterated.
Reverse	Ujjain symbol on the left, part of railing on the right. Both these are enclosed in a square border, of which one complete side, and a part of the second only have come in the die-struck portion. The remaining part of the right hand side is peeled off.

The coin may be identified as that of Sātakamṇi I. Its symbols compare very favourably with those of the coin published by Rapson,[6] which he attributes to King Sātakamṇi. The exact locality from which it came was not known, but it was assigned to Western India. The present coin suggests that one of the localities in this region, where it was current, was Nasik.[7]

7. *Coin No. 5048*

MG.E.N. Found below wall of Period IV, with a multi-spouted pot. [pl. XIV, 1].

Metal	Copper.
Shape / Size	Round, very thick. (Diameter 16 mm. × 9 mm. thick).
Weight	About 18.79 grammes (292 grains).
Obverse / Reverse	Much effaced. But it can be attributed to the Mughal Emperor Akbar, according to Shri R. G. Gyani, who kindly studied this and the coin mentioned below.

Not illustrated.

6. Rapson, *op. cit.*, p. 3, pl. I, 7.

7. For the other rare types of coins, recently found on the surface of MG.N., see *JNSI*, XIV, (1953), p. 54, and XIII, (1951), p. 53.

Coin No. 36

MG.N.G(1)

Metal Copper.

Shape / Size: Pentagonal. Thick. (19 mm. × 18 mm. × 4 mm.)

Weight 10.044 grammes (155 grains).

Obverse / Reverse: Much effaced, still it can be attributed to Malhar Rao Gaekwad of Baroda.

Not illustrated.

Though the number of coins found is small, a few of them are important from the point of view of dating the finds and layers and the occurrence of certain new coin types.

Of the two Cast Uninscribed Coins from MG.N. one is definitely of this type. The attribution of the second may be regarded as provisional. Since coins of these type have been dated between the 3rd and 2nd centuries B.C. by ALLAN[8], it will be justifiable to date layer 4 to this period. Such a dating will not be inconsistent with the age of the layer arrived at from the occurrence in it of the N.B.P. and the black-and-red 'Megalithic-like' pottery. In fact, in the present state of Indian archaeology, when reliable data is being collected only of late, such cross-dating of finds is inevitable. The second important fact is the provenance. Hitherto it was believed that the distribution of these coins was confined to Central India (Madhya Bhārat) and the United Provinces (Uttar Pradesh). The Nasik coins would extend it for the first time to include parts of North Deccan. Among their class also, the coins present two new varieties.

Stratigraphical significance of the coin of Satakaṃṇi I (?) is little, since it comes from a much later layer, where it may have gone to various reasons. It, however, indicates the possibility of the existence of Early Satavahana Coins on the site, in the layers assignable to this period. Its value as fixing the provenance of such coin types is already pointed out[9].

The occurrence of the solitary Mughal and Maratha coins is of confirmatory value only.

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8. ALLAN, *op. cit.*, Intro. p. LXXIV. Even early part of the 4th century he does not totally rule out, because before finally limiting the period of these coins to the 3rd-2nd century B.C., ALLAN said that these coins were probably of the same period as the Silver Punched Marked Coins.

9. For other surface Satavahana coins see *JNSI.*, XIII, p. 53, and XIV, p. 54. 'See here pl. V, 4.'

V

MICROLITHS

The occurrence of microliths in the basal habitation layer separated from that of the Early Historic by a weathered horizon constitutes one of the important discoveries at Nasik. The material, though not much, as the area available for digging was considerably limited, contains over 60 per cent of usable specimens. Among the latter are a complete, well worked trapeze, three lunates with fully worked back, regular and irregularly fluted cores, besides several parallel-sided flakes. Most of these have their ends broken, but it is possible that some had an obliquely blunted point, which would have given us what is called the 'penknife' blade. If so, the Nasik microlithic industry would be identical with what was later found at Jorwe and this season at Nāvḍā-toli on the Narmadā.[1] What we have not got [so far] among its cores or flakes is a thin core or flake with crested-ridge made by cross-flaking. The retouch is marked by steep vertical scars, and is usually on the back or sides, but rarely on the cutting edge. However few the number of finished tools, there is no doubt that a well-developed microlithic industry existed at Nasik, [much ?] before the Early Historic Period.

Microlithic material—including finished tools, cores, chips and nodules—recovered from all the trenches numbered 126 pieces. None was found from K.W.N. Its trench and layerwise distribution is as follows :

I MG.N.		II MG.S.N.	III MG.N.N.	IV MG.E.N.
1	from D(5)	1 from (3)	1 from (3)	1 from (1)
21	from A(6)	10 from (4)	7 from (4)	2 from (3)
11	from B(6)			4 from (4)
54	from C(6)			
7	from D(6)			
6	from E(6)			
100	Total	11	8	7
	Grand Total			126

1. See SANKALIA, H. D., SUBBARAO, B., and DEO, S. B., an article on "Archaeological Sequence in Central India," in *Southwestern Journal of Anthropology, Vol. 9, pp. 343-56.*

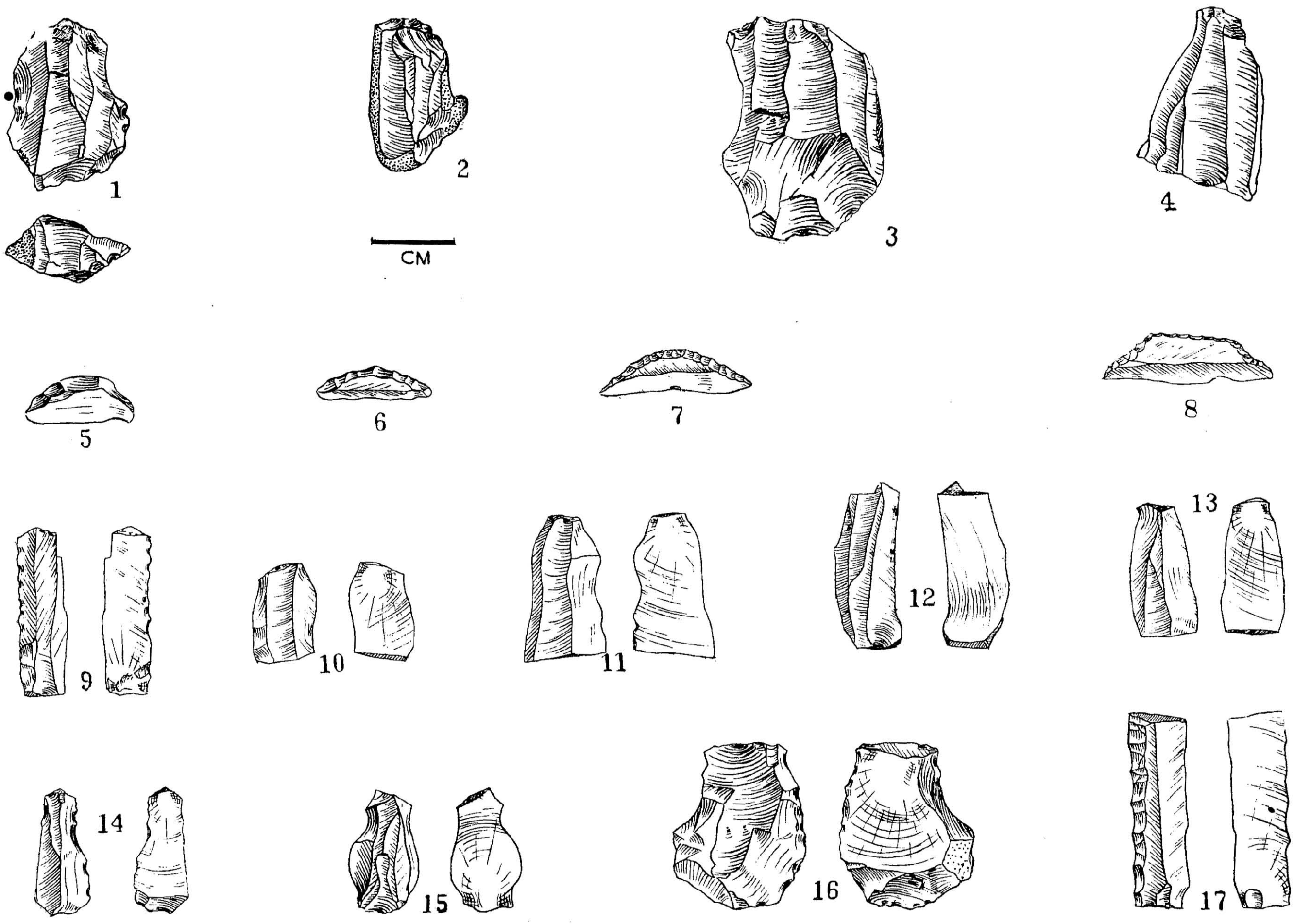
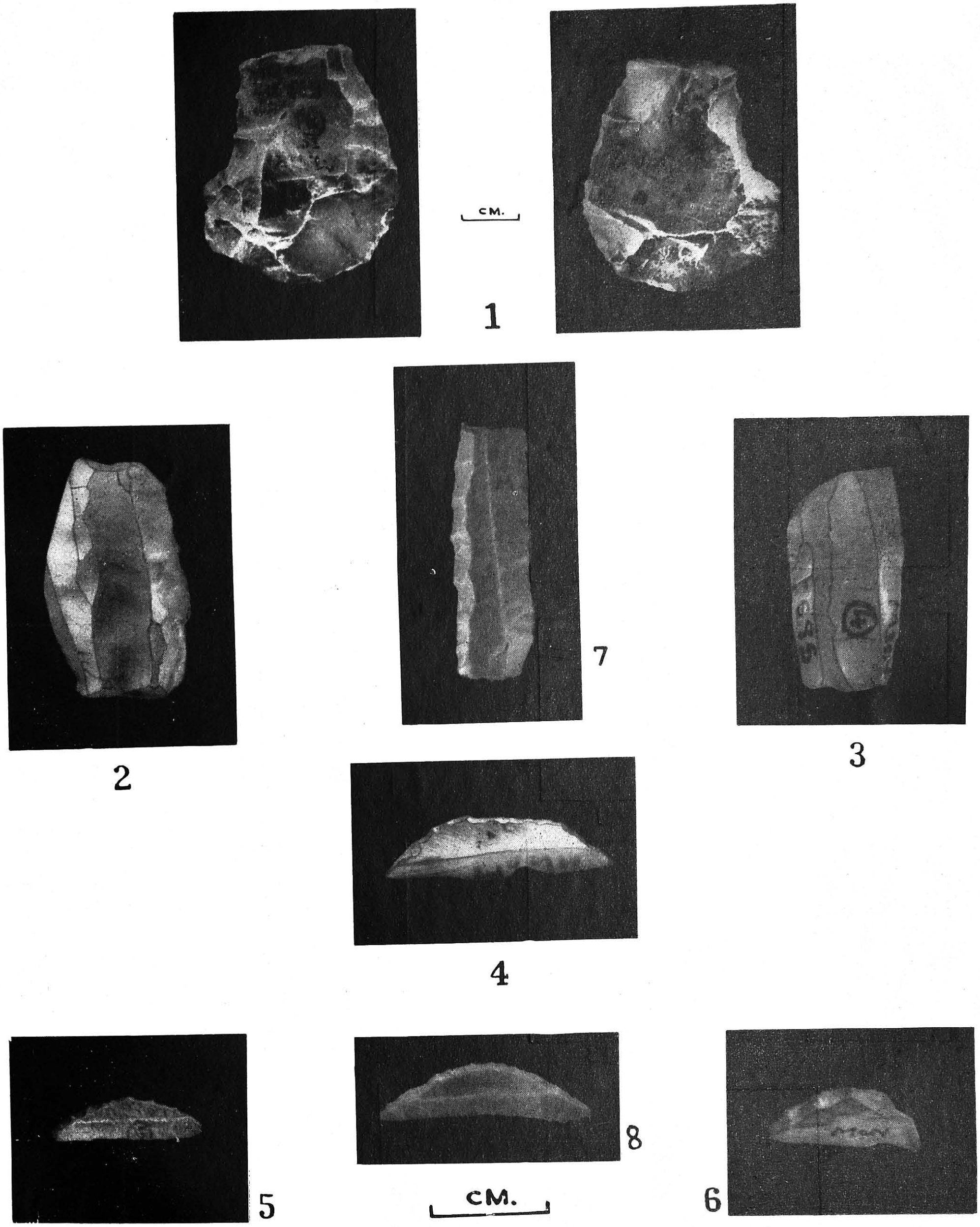


Fig. 'a' Microliths from Nasik

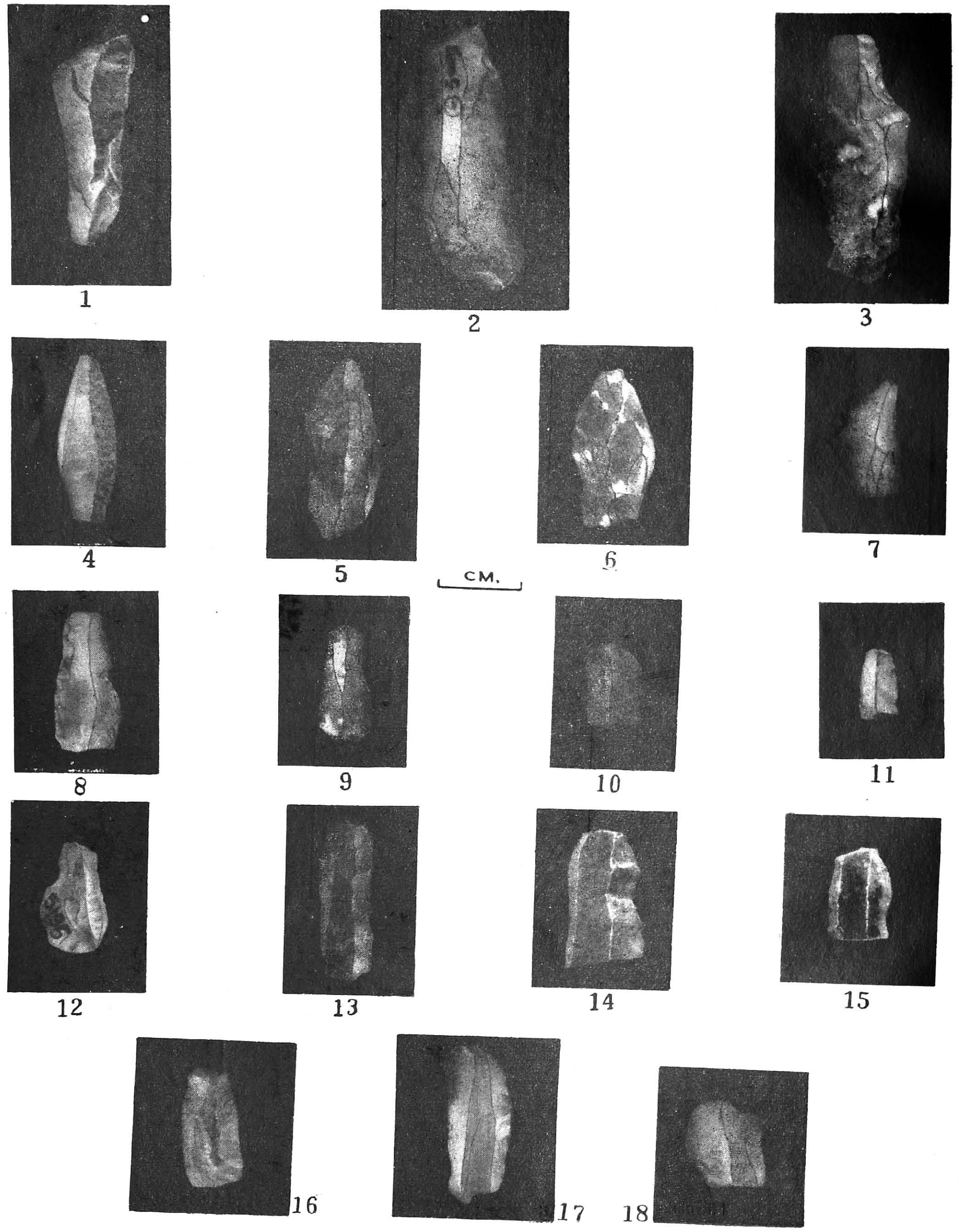
(*See pp. 34-37*)

PLATE V.I



Microliths: Cores (1-3). Trapeze (4) Lunates (5-8), and one edged blade

(*see pp. 34-37*)



Flakes (1-18)
(*See pp. 34-37*)

Thus 99 in MG.N., 10 in MG.S.N. and 8 in MG.N.N. belong to the lowest layer of thick, heavy black soil.[2]

Out of these 126 pieces, 86 may be regarded as tools or would-be tools. They may be classified as follows :

13 Cores [11 fluted, 6 from MG.N. & 5 from MG.S.N.]
5 flakes with parallal sides and mid-ridge. [3 from MG.N. and 2 from MG.N.N.].
8 flakes with parallel sides and flat mid-ridge. [all from MG. N.].
8 flakes one-edged (*unretouched*) with pseudo back. [1 from MG.N.N. and 7 from MG.N.].
1 flake with worked back. [from MG.N.N.].
3 Crescent blades [from MG.N.].
48 Irregular flakes [from MG.N.].

The most common material is milky chalcedony but there are a couple of cores, a few chips and two blades of green jasper, one of blood-stone and about seven chips of red and brown jasper, and one of carnelian.

The most important cores, blades and flakes are described below in detail and illustrated :

I *Fluted Cores*

(*a*) *Irregular*

No. 5087. Core of medium size, with one or two vertical parallel flake scars, and two small horizontal flake scars, possibly used as an end scraper, as there are deep flake scars and signs of use or retouch at one (lower) end. 4 mm. long, 27 mm. broad, 16 mm. thick. Carnelian. MG.E.N.Ik(4). [Fig. a, 1].

No. 5166. Core of medium size, with two or three vertical flake scars on one side of the upper flat surface. The rest has cortex. 37 mm. long, 23 mm. broad, 24 mm. thick. Chalcedony. MG.N. C(6). [Fig. a, 2].

(b) *Fluted Cores with flattish, truncated base and roughly conical top*

No. 5059. Here the base is naturally flattish and has cortex. 27 mm. long, 28 mm. broad, 14 mm. thick. Chalcedony. MG.N. E(6). [Not illustrated].

No. 830. One of the best specimens. 23 mm. long, 13 mm. broad, 9 mm. thick. Chalcedony. MG.N. C(6). [pl. VI, 2].

No. 5140. One of the best specimens. 20 mm. long, 15 mm. broad, 16 mm. thick. Chalcedony. MG.N. C(6). [Fig. a, 4].

No. 702. One of the best specimens. 28 mm. long, 22 mm. broad, 14 mm. thick. Green jasper. MG.S.N. (4). [Fig. a, 3].

(c) *Fluted Core, with base and top both truncated*

No. 695. Fine specimen, worked on all sides. 20 mm. long, 11 mm. broad. Chalcedony. MG.S.N. (4). [pl. VI, 3].

II. *Blades*

(a) *Crescent or Lunate*

No. 5175. Small lunate, with straight, unretouched edge, and back originally steeply retouched. Now the scars are somewhat effaced. 12 mm. long, 5 mm. broad, 3 mm. thick. White agate. MG.N. C(6). [pl. VI, 6 ; Fig. a, 5].

2. Exact depth was recorded in some cases, but as the soil later became very hard, it was dug out in large lumps.

No. 5073. Very small lunate, with straight, unretouched edge, but the back finely worked by vertical retouches. 14 mm. long, 4 mm. broad, 2 mm. thick. Green jasper. MG.N. A(6). [pl. VI, 5 ; and Fig. a, 6].

No. 5162. Very small lunate, with straight unretouched edge, the back worked as the previous one. 18 mm. long, 4 mm. broad, 1-½ mm. thick. Green jasper. MG.N. C(6). [pl. VI, 8 ; Fig. a, 7].

(b) *Parallel-sided blades or flakes, with a flat central scar*

Almost all are broken bits.

No. 5144. Blade, with one edge perhaps used, slightly broken. 20 mm. long, 7 mm. broad, about 2 mm. thick at the bulbous end, but otherwise less than 1 mm. thick. Chalcedony. MG.N. C(6). [pl. VII, 13 ; Fig. a, 9].

No. 5160. Blade, parallel-sided, having one of its sides, retouched. Broken. 11 mm. long, 7 mm. broad, 1 mm. thick. Green jasper. MG.N. C(6). [pl. VII, 15 ; Fig. a, 10].

No. 5132. Blade, parallel sided. Similar to 5150, but not retouched. 16 mm. long, 5 mm. broad, 2 mm. thick. Section flattish triangular. Greenish chalcedony. MG.N. C(6). [pl. VII, 14 ; Fig. a, 11].

(c) *Parallel-sided, but with high middle portion, though without proper mid-ridge*

No. 5091. Blade, similar to 5150, having one side retouched, and the other seems to have been used. Broken. 20 mm. long, 7 mm. broad, 4 mm. thick at the butt end, but the rest is only 2 mm. thick. Section plano-convex. Chalcedony. MG.N. A(6). [pl. VII, 16 ; Fig. a, 13].

No. 5127. Blade or flake, partly similar in shape to 5091, but otherwise the section at the broken end (middle) is flat triangular. No sign of retouch. 9 mm. long, 7 mm. broad, 2 mm. thick at the bulbous end, but otherwise only 1 mm. thick. Carnelian. MG.N. A(6). [pl. VII, 18].

(d) *Parallel-sided, but with back worked*

No. 5036. Large fragment of a parallel-sided blade with the straight back finely retouched, both the ends broken. Straight, sharp but unworked edge. 24 mm. long, 6 mm. broad, 2 mm. thick. Red jasper. MG.N. D(6). [pl. VI, 7 ; Fig. a, 17].

III *Trapeze*

No. 5197. Small, with unretouched edge, but the back and oblique sides delicately worked by vertical, minute retouches. 20 mm. long, 6 mm. broad, 1 mm. thick. Milky chalcedony. MG.N.N. [pl. VI, 4 ; Fig. a, 8].

IV *Flakes*

(a) Flakes with mid-ridge.

(b) Flakes with ridge on one side.

(a)	5135	Chalcedony.	MG.N. C(6).	
		Chalcedony.	MG.N. D(6).	
	5183	,,	,, (6)	[pl. VII, 5].
	5151	,,	,, (6)	[pl. VII, 4].
	5198	,,	MG.N.N(4)	[pl. VII, 8].
	5010	,,	MG.N. C(6)	[pl. VII, 9 ; Fig. a, 14].

No. 5105. The butt end has a notch on the side as well as on top and this may have been useful for hafting. Chert. Has definite notches at the butt end. MG.N.N(4). [pl. VII, 12 ; Fig. a, 15].

5118 Red Jasper. MG.N. A(6).
(b) 5009, Chalcedony. MG.N. C(6).
5151, Chalcedony. MG.N. C(6). [Not illustrated].
5074, ,, MG.N. A(6). [pl. VII, 3].

(c) *Core Flakes*

Of the several, only one is illustrated, for it is definitely further worked upon, probably with a view to getting an end or/and side scraper.

No. 5022. Thick core flake, having a negative bulb of percussion on one side (upper) and a positive on the under. The edges of the upper, as well as of the under, particularly the thick butt-end back were further trimmed with a view to getting an edge and a worked back. But for some reason the back has remained very even. The edge is also slightly trimmed or used. 40 mm. long, 34 mm. broad, 16 mm. thick at the broadest end. Bloodstone-jasper with green and red bands. MG.E.N. Ie(3). [pl. VI, 1 ; Fig. a, 16].

VI

POTTERY

General Characteristics

Stratigraphically and stylistically Nasik pottery may be grouped into four periods :—

Period I — Black Soil (Proto-historic).
Period II — Post-Black Soil (Early Historic).
Period III — From Intermediate Layers (Roman Contact).
Period IV — Top Soil (Early Muslim and Maratha).

In fabric, colour and to a great extent even in shape the pottery of Period I is quite different from the pottery of Periods II, III and IV. From its characteristic powdery surface and light orange colour, we called it Orange Coloured Pottery (O.C.P.)[1]. This field-name may be retained. Hence it is not called here red ware, though in contra-distinction from the grey or black ware it can be described as red. Some of these O.C.P. were also painted in black or red, sometimes on fine well levigated light brown slip. Among the latter existed vessels with spouts, and carinated pots, which do not recur in the historic period. Among the ordinary O.C.P. may be found types—like rimless bowls, dishes and vessels with collared necks—which do occur later.

The chief features of Period II pottery are, as far as the fabrics are concerned, the N.B.P. and the black-and-red burnished or polished ware.

1. Some of it has retained the fine, bright ochery slip and may be superficially compared with similar ware from the lowest level at Hastināpur. But unless both are scientifically examined, this resemblance need not be emphasized.

These were the specialized wares, but the mass of pottery for ordinary utilitarian use was the red ware. The ordinary black was also there, but in very negligible quantity. The technological features of the N.B.P. and the black-and-red ware have been dealt with before.[2] Here it may only be pointed out that Nasik is the first site in the South where the N.B.P. has been found, and where some new or more shapes in it are available. It did not seem to be present at Kolhapur. The black-and-red or all-black has many of the characteristics of the Megalithic ware, and some of its types are identical with the similar ware found from Kolhapur ; only very rarely both these sites yield the fine, thin, extremely well polished fabric of the Megalithic types, while the typical funnel-shaped bowls are totally absent. Otherwise in technique—inverted firing and burnishing or polishing over a black or black-and-red slipped surface,—there seems to be no difference.

Mention must also be made of a few sherds of the black rouletted ware of the Arikamedu type, a sherd of the lustrous Samian ware from the late mixed layers of the MG.E.N. and imitation red polished ware from the K.W.N. Though not found in well stratified deposits these indicate that Nasik had also experienced contact with the Roman World and latter's products or their imitation would be found in future excavations there.

The pottery of Period IV is mostly ordinary black or red. Both, however, present a few unique shapes. This period is also distinguished by the presence of a small amount of Chinese Celadon ware.

Explanation of symbols, arrangement and classification of Pottery.

I. Pottery from MG.N. which was extensively excavated upto the natural soil layers is made the basis for the primary grouping in types.

II. Pottery from other sub-areas—K.W.N., MG.S.N., MG.E.N., MG.N.N., is compared with the basic types and grouped with them.

III. In determining types and sub-types those from layer 6 and 5, naturally come first. But those from layer 6 are studied quite separately. From this layer mainly sherds were available out of which only a few types could be reconstructed.

So pottery from layer 5 is used as the foundation for determining the main types current during Period II and later. If similar types are found repeated in subsequent layers they are shown thus :

T. No. 1 from layer 5.
T. No. 1′ from layer 4.
T. No. 1′′ from layer 3.
T. No. 1′′′ from layer 2.
T. No. 1′′′′ from layer 1.

If a divergent or new feature is found in the same type, it is shown thus :

T. 5A from 5 or T. 5′ a from 4.

using the capital ' A ' for sub-types in Layer 5 and small ' a ' for new sub-types in subsequent layers.

2. Cf. *Anc. Ind.* No. 1, (1946), pp. 55-58.

POTTERY

PERIOD I

This pottery was collected mainly from the lowest—a sticky, heavy, black—soil layer in MG.N., MG.N.N., and MG.S.N. This layer is missing in K.W.N., the lowest layer there being that of gravel.

Arrangement

Every piece excavated from the lowest layers in the above trenches was gathered. Since MG.N. was dug in smaller squares it has been thought advisable, with a view to indicating the distribution per sub-square, to record the number of sherds found in each of these squares. The sherds from each of these squares are further classified into various groups, because it was noticed that minute distinctions in the colour, texture and thickness of the fabrics did exist, and since very few complete vessels were recovered, a detailed classification of the nature of these sherds would facilitate future studies. However, where affinity or identity between any two groups of sherds from the various sub-squares is apparent, it is pointed out. Sherds from which shapes could be reconstructed are illustrated separately.

Features

While red and its various shades—varying from dull yellow ochre or bright orange to dark crimson red—may be described as the general feature, a bright or dull orange red may be called the distinctive feature of Nasik I pottery. This ware has a soft powdery surface. This as well as the ordinary yellow ochre has sometimes a bright orange red slip or wash on it. This seems to have been given after the vessels were fired. Hence it, as well as the paintings in black or red over it are found partly effaced, and go off, if rubbed. This was sometimes (on account of the small number of sherds found) further decorated by simple red bands or more frequently black bands or broad bands filled in with straight or oblique strokes forming squares or double triangles. So, painting in black over a red or reddish surface is the second feature of this period. *This does not recur later at Nasik.* Both these wares were made on the wheel, and fired, some very well indeed, as for instance [Sherd Nos. 6021a, 5031, 5199]. But in others the firing does not seem to be sufficient, for inspite of a metallic sound and grey burnt core, in some yellow ochre as well as in ochre washed sherds, the surface is powdery.

The third distinctive feature of Nasik I pottery is a very light, whitish red ware. Its underside is invariably found to be beaten and presents

a very uneven surface. From the sherds it is not possible to say whether it is fully handmade or only partially. With this may also be grouped a ware which is very light in weight and has a coarse texture. Its clay contained a large amount of grass which on being burnt has left many tiny crevices. It has a smooth, darkened, blackish surface. A grey ware was also in fashion. Only two sherds were found, from which and also from the reconstruction of its shape and its probable affinity with the burial urn at Brahmagiri and Jorwe, it would appear that it was meant for some specific use only.

As far as shapes of other vessels are concerned, it is difficult to say much about types and their occurrence or non-occurrence later on elsewhere. For only two partly complete vessels were found. The rest are all mostly indeterminate sherds, from which only very few rims of vessels and some bowls and dishes can be reconstructed. From among the rimless bowls, shallow rimless dishes or roasting pans, a number of medium mouthed or broad mouthed vessels, and vessels with globular body and high narrow neck, it appears that bowls, [Fig. 4, f, and Fig. 2, b], and dishes as well as the globular vessels, may turn out to be the distinctive types of Period I. Far more interesting seems to be the painted pottery. For even its few sherds indicate the existence of spouted vessels and bowls or vessels with highly carinated or angular walls which do not recur later at Nasik, but are found in abundance at Jorwe.

DISTRIBUTION OF PERIOD I POTTERY

MG.N. A(6)

I. One sherd (No. 6019) with thick greenish white paint over yellow ochre-like surface, inner side light crimson, coarse, medium thick fabric, wheelmade. (Illustrated).

II. Two sherds (Nos. 6020-21), with black band over a red wash, original surface of yellow ochre-like colour, medium thick fabric, core light grey and yellow ochreish respectively, coarse gritty clay, inner surface powdery, not well fired. Too tiny for ascertaining whether wheel or handmade. (Illustrated).

IIa. One sherd (No. 6021a) with remains of broad parallel running bands, filled in by criss-cross hatchings over a red wash, the primary surface being yellow ochreish and powdery ; medium thick fabric ; wheelmade.

III. Four sherds (Nos. 6026-29) with traces of red wash over a yellow ochre surface, medium thick fabric, greyish core, surface powdery. Wheel or handmade uncertain, possibly wheelmade. (Not illustrated).

IV. Ten sherds, bright orange colour, powdery surfaces, thin and medium fabric, not well fired. Except one sherd, rest probably of wheelmade vessels. (Not illustrated).

V. Fifty-one sherds of yellow ochreish ware. Thin and medium fabric, though the core is greyish and the sherds give a metallic sound, indicating good firing, the surfaces are powdery. (Not illustrated).

VI. Forty-four sherds of very thick, coarse, yellow ochreish ware. The core is blackish or at times yellow ochreish ; the clay very coarse, and sandy. The sherds seem to be of large storage jars and similar vessels. (Not illustrated).

VII. Nine sherds of coarse handmade ware, medium thick, light brown smooth surface, greyish core ; very light in weight. (Not illustrated).

VIII. Eight rim fragments. (4 illustrated).

IX. Three sherds (Nos. 6023-25) of a thick dish or baking pan. Thick fabric, smooth surface, ashy grey colour. (One illustrated).

MG.N. B(6)

I. Two sherds—one (No. 6139) with a patch of black paint over orange coloured surface, medium thick fabric, powdery surfaces ; the other (No. 5092) has traces of a black band, over orange coloured surface. (Illustrated).

II. Five sherds with traces of red wash over a yellow ochreous surface. Four sherds of thin fabric, the fifth of medium thickness having greyish core, well fired, and definitely wheelmade. (Not illustrated).

III. One sherd with traces of a chocolate coloured wash over a yellow ochreous surface ; medium to thick fabric, greyish core, well fired. (Not illustrated).

IV. Eight sherds, similar to IV of A. (Not illustrated).

V. Thirteen sherds, similar to V of A, and definitely wheelmade. (Not illustrated).

VI. Seventeen sherds, similar to V, but with their under surface and the core also yellow ochreish in colour. (Not illustrated).

VII. Thirty-nine sherds, similar to VI of A. (Not illustrated).

VIII. Forty-two sherds, similar to VII of A. (Not illustrated).

VIIIa. Five sherds of vessels with beaten, uneven surfaces, probably handmade, light brown, very light in weight. (Not illustrated).

MG.N. C(6)

I. Eight sherds (Nos. 6285-92) with traces of black band over a yellow ochre surface, or a surface with red wash (No. 6287). Sherd (No. 6285) has a very thick black band. (Illustrated).

II. Two sherds (Nos. 6293-94) with traces of a chocolate band over a smooth orange coloured surface. The underside is similar, but has a powdery surface. The core is dark brown and reddish. (One illustrated).

III. Seven sherds, similar to III of A. (Not illustrated).

IV. Seven sherds, similar to III of B. (Not illustrated).

V. Twelve sherds, with powdery orange coloured surfaces, but greyish core. (Not illustrated).

VI. One hundred and twenty-four sherds, similar to V of A ; and some similar to VI of B. (Not illustrated).

VII. Three pieces (Nos. 6445-47) similar to VIIIa of B. One piece (No. 6447) seems to have an engraving by punctured dots of a pig's head and snout. (Illustrated).

VIII. Eighteen rim fragments of very thin, medium thick and very thick yellow ochreish ware. (Seven, Nos. 6459-65 are illustrated).

VIIIa. Upper half of a narrow mouthed globular vessel (No. 5237) with outturned rim, and light broad black bands round the narrow neck, along the shoulder, and round the belly. Light ochrey coarse surfaces, medium thick fabric, wheel-made. (Illustrated).

VIIIb. Spout of vessel (No. 5763), painted with a thick broad black band along its length, and a thin one on the mouth of the spout, over a smooth brown surface, the result of a fine slipcoating over a similar coloured surface, clay well levigated, and extremely well baked. Depth between 20 and 21 feet. (Illustrated).

IX. Nine sherds of a vessel, similar to IX in A.

X. Small, pointed, cylindrical terracotta object, (No. 6466), possibly horn of an animal (or a leg ?). Illustrated.

XI. Two sherds (Nos. 6467-68), including a rim fragment of thick, smooth grey ware. The rim fragment seems to be a part of a wide-mouthed pot, with flaring rim. If so, it is comparable to similar pots (Fig. 3, a) from Jorwe, and burial pot of Brahmagiri IB culture. (Illustrated).

XII. Four hundred and twenty sherds, similar to VI of A.

XIII. Forty-two sherds, similar to VII of A.

MG.N. D(6)

I. Six sherds with traces of faint black band over reddish wash on orange coloured surface. (Not illustrated).

1a. One sherd (No. 5031) with remains of broad black-bordered bands filled in with vertical and horizontal thinner lines, all of equal depth in colour. These meet at an acute angle a thick solid black band, painted over a deep red, the primary surface being light red ; wheelmade, fine fabric. (Illustrated).

II. One sherd with chocolate wash over a yellow ochre surface ; medium thick fabric, wheelmade.

III. Six sherds, similar to III of A.

IV. Fifty sherds, similar to V and VI of A.

V. Twenty-six sherds, similar to VIII and VIIIa of B.

VI. Twenty-four sherds, similar to VI of A.

VII. Seven rim fragments. (Some illustrated).

VIII. One sherd (No. 6604) of large thick vessel, having smooth dark red surface, the under surface is coarse, and shows inclusions of large gravel and mica fragments, and marks of grass mixture in clay. (Illustrated).

MG.N. E(6)

I. Two sherds (Nos. 6605-6606) similar to III of A but in addition there also seem to be traces on the underside. (Not illustrated).

II. Four sherds of light orange colour ware, one sherd having a fine black core. (Not illustrated).

III. Two sherds of light grey ware, core also greyish. (Not illustrated).

IV. Two sherds of handmade, very light pottery, similar to VII of A. (Not illustrated).

V. Four large sherds of thick Rānjaṇ (storage jar) or similar vessel. (Not illustrated).

MG.N. N. (4) = (6) of MG.N.

I. One sherd (No. 6621) having remains of thick black bands forming an acute angle over a red wash, the primary surface being light brown ; medium thin fabric, well baked and wheelmade. (Illustrated).

Ia. One sherd (No. 5199), fragment of a vessel with carinated shoulder, having two thin black bands along the carination, and remains of three similar but oblique strokes meeting at an acute angle over a red wash, the primary surface being light red. Fabric etc. similar to I above. (Illustrated).

Ib. One sherd (No. 5200) of a thick walled vessel, having a red slip over a powdery surface. This was further painted with black bands, now almost effaced. The underside is smooth but powdery. Wheelmade. (Illustrated).

II. Seven sherds, similar to III of A.

III. Twenty-seven sherds, similar to VI of B.

IV. Fourteen sherds, similar to V of A.

V. Thirty-three sherds of fine orange-coloured ware, similar to IV of A.

VI. Fifteen sherds of thick and medium thick, beaten, light red pottery, with very irregular surface, particularly inner. Similar to VIIIa of B. Possibly it is wheelmade, but beaten with hand, as there are grooves on the outside of the illustrated piece. (One illustrated).

VIa. Seven pieces of a pottery similar to VI but dark red in colour. (Not illustrated).

VII. Six fragments of rims, yellow ochre ware. (Four illustrated).

VIII. Sherd (No. 6732), probably a large rimless bowl, with a slightly incurved top, now broken ; dark red, medium thick, coarse fabric containing a large amount of lime concretions, smooth externally, and perhaps polished along the rim which appears glossy ; wheel or handmade uncertain. This is the only piece from the entire excavation. (Illustrated).

IX. Sherd (No. 6733) of a thick round-bottomed, coarse yellow-ochre ware.

X. Two sherds (Nos. 6734-5) of thick orange coloured ware, one having grooves on the inner side, the other (No. 6735) on the outside. The latter seems to be part of a regular design, consisting of a broad band of thinly incised grooves joined by two obliquely incised ones. (Illustrated).

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pl. X, 1-9

The following are illustrated

1, *top*, Sherd of a vessel with beaten, uneven surface, light brown, handmade. No. 6445, MG.N. C(6).

1, *bottom, left*, do. do.

1, *bottom, right*, do. do. No. 6709, MG.N.N.(4).

2, *left*, Sherd with buff paint over yellow ochre-like surface, inner side light crimson, coarse, medium thick fabric, wheelmade. No. 6019, MG.N. A(6).

2, *right*, Sherd, rim fragment of yellow ochre ware, powdery surfaces. MG.N. A(6).

3. Sherd, with traces of dark red slip over yellow powdery surface, internally and externally. No. 6622, MG.N.N.(4).

4. Sherd, underside coarse and showing inclusions of large gravel and mica fragments, and marks of grass mixture in clay. No. 6604, MG.N. D(6).

5. Sherd of a vessel with beaten, uneven surface, showing an engraving by punctured dots of a pig-like head and snout (?). No. 6447, MG.N. C(6).

6. Sherd, probably rimless bowl, showing glossy red border, medium thick coarse fabric containing a large amount of lime concretions, wheel or handmade uncertain. No. 6732, MG.N.N. (4). [See also Fig. 2, e].

7. Sherd, with deep incised mark, on a light red, coarse surface, blackish core. No. 6276, MG.N. B(6). [See also Fig. 4, k].

8. Sherd, with thick black band over a yellow ochre surface. No. 6285, MG.N. C(6).

9. Sherd, rim fragment of a grey ware. No. 6467, MG.N. C(6). [See also Fig. 3, b].

pl. IX, 1-9

1. Sherd with traces of a chocolate band over smooth orange coloured surface. No. 6293, MG.N. C(6).

2. Sherd of a thick walled vessel having a red slip over a powdery orange coloured surface. This was further painted with black bands, now almost effaced. No. 5200, MG.N.N.(4).

3. Fragment of a vessel with carinated shoulder, having two thin black bands along the carination, and remains of three similar but oblique strokes meeting at an acute angle, over a red wash, the primary surface being light red. No. 5199, MG.N.N.(4). [See also Fig. 1, c].

4. Sherd, neck portion of a vessel, having a thick black band over a smooth red slipped surface. M.G.S.N.(4).

5. Sherd with remains of thick black bands forming an acute angle, over a red wash, the primary surface being light brown. No. 6621, MG.N.N.(4).

6. Spout with slightly tapering end. It is painted with a thick broad black band along its length, and a thinner one on the mouth, over a smooth brown surface, the result of a fine thick slip over a similar coloured surface, clay well levigated and extremely well baked. No. 5763, MG.N. C(6), between 20 and 21 feet. [See also Fig. 1, d].

7. Sherd with black band over a red wash. No. 6021, MG.N. A(6). [See also pl. IX, 5].

8. *left*, Sherd with remains of broad, black and parallel running bands, filled in by criss-cross hatchings, over a red wash ; the primary surface being yellow ocherish ; medium thick fabric, wheelmade. No. 6121a, MG.N. A(6). [See also Fig. 1, b].

8. *right*, Sherd with remains of broad black-bordered bands filled in with vertical and horizontal thinner lines. These meet at an acute angle a thick solid black band, painted over a deep red, the primary surface being light red, wheelmade, fine fabric. No. 5030, MG.N. D(6). [See also Fig. 1, c].

9. Sherd with traces of a black band, over orange coloured surface. No. 5092, MG.N. B(6).

pl. VIII, 1-5, and Figs. 1-2

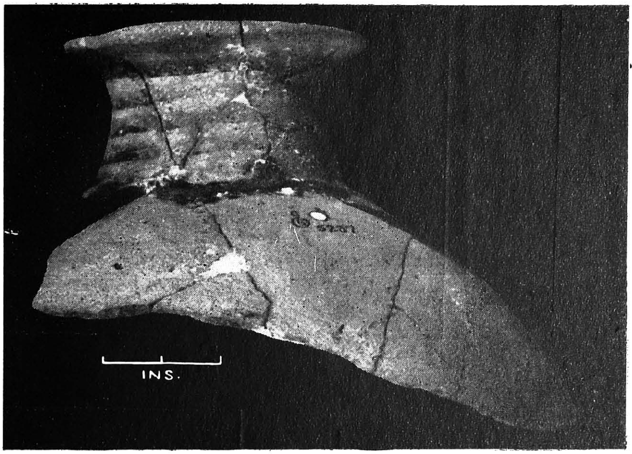
1. Upper half of a narrow-mouthed globular vessel with outturned rim, and light black broad bands round the narrow neck, along the shoulder, and round the belly. Light ochreous, coarse surface, medium thick fabric, wheelmade. No. 5237, MG.N. C(6). [See also Fig. 1, a].

2. Sherd with traces of black bands over surfaces having a red wash. No. 6287, MG.N. C(6).

3. Globular vessel with a narrow neck having straight sides, but top broken, so that no idea can be had of the rim. Coarse, brownish surfaces, wheelmade. Probably the neck was coated with an orange coloured paint, but there are no traces of the paint or wash on the body. No. 5238, MG.N. D(6). 21 feet. [See also Fig. 2, a].

4. Sherd with a patch of black paint, over orange coloured surface. No. 6139, MG.N. B(6).

5. Sherd with black band over a red wash. Original surface of yellow ochre-like colour. No. 6020, MG.N. A(6). [See also pl. IX, 7].



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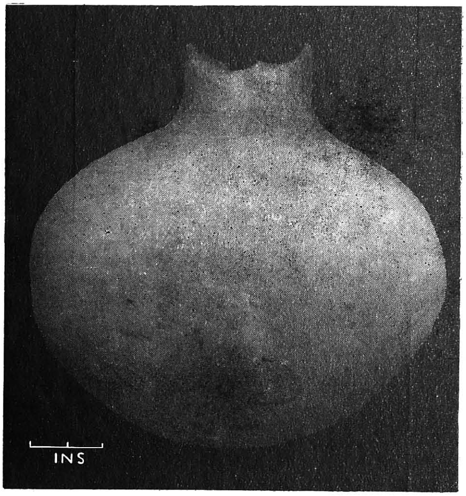

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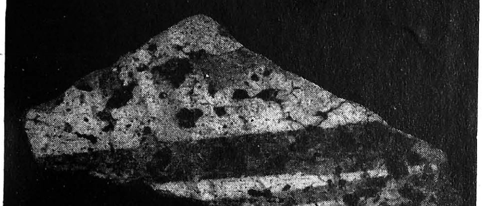


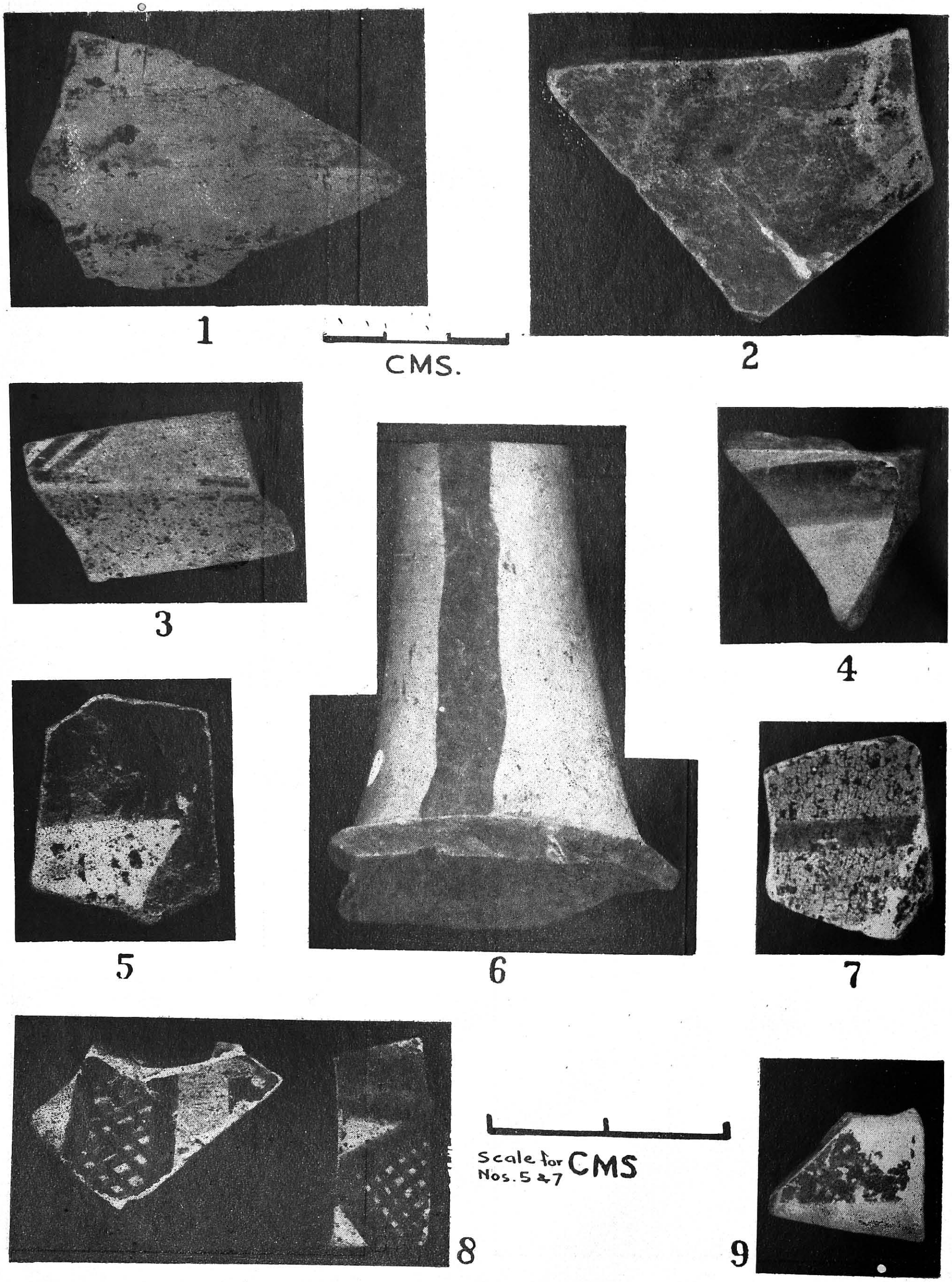
4

5

Painted and Ochre (orange) coloured Pottery (1-5), Period I.

(*See pp. 53, 54, 56, 67*)

PLATE IX



Painted Pottery (1-9). Period I.

(*See p. 44*)

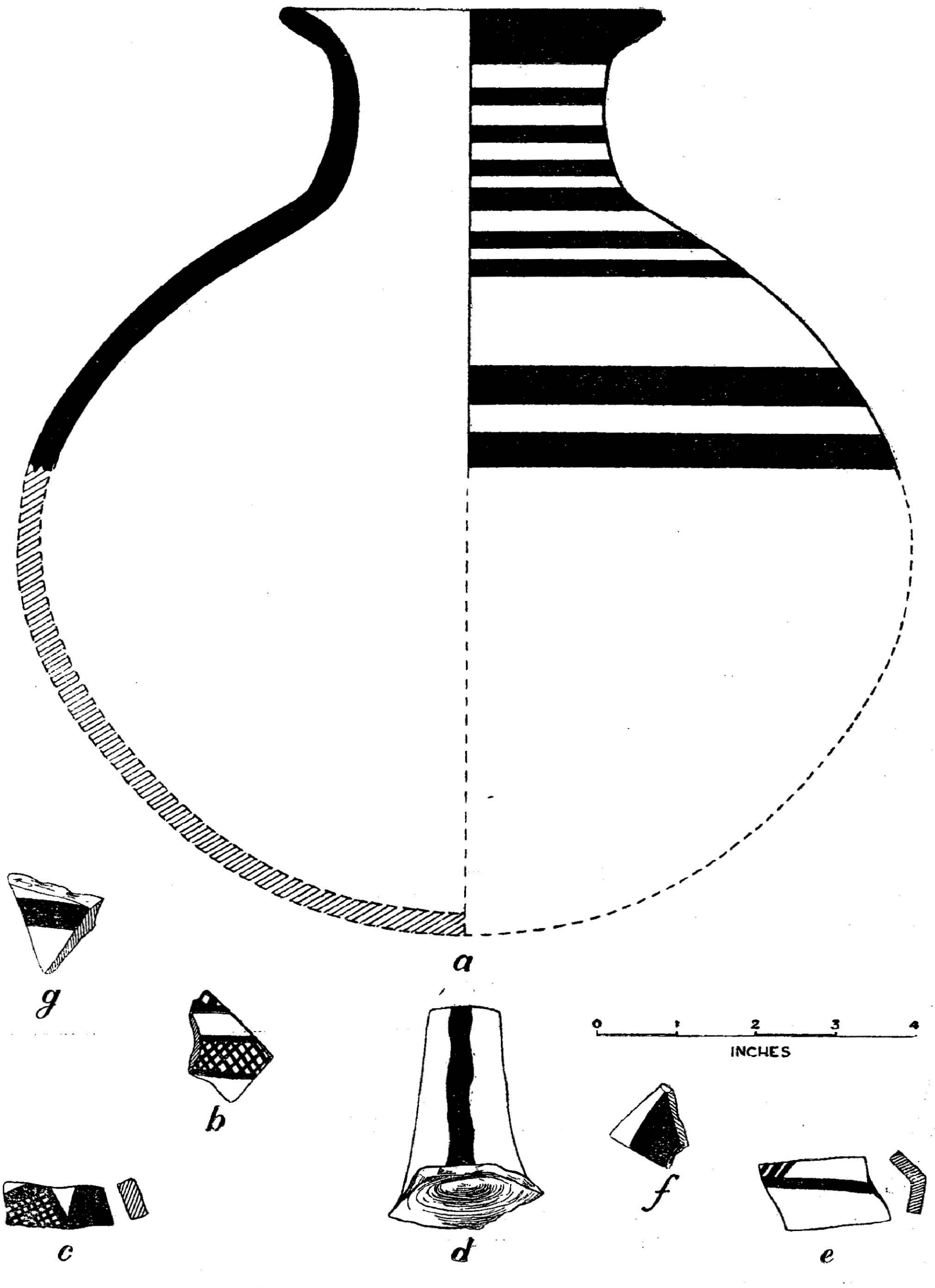


Fig. 1, Painted Pottery, Layer 6, Nasik, Period I.

(*See p. 45*)

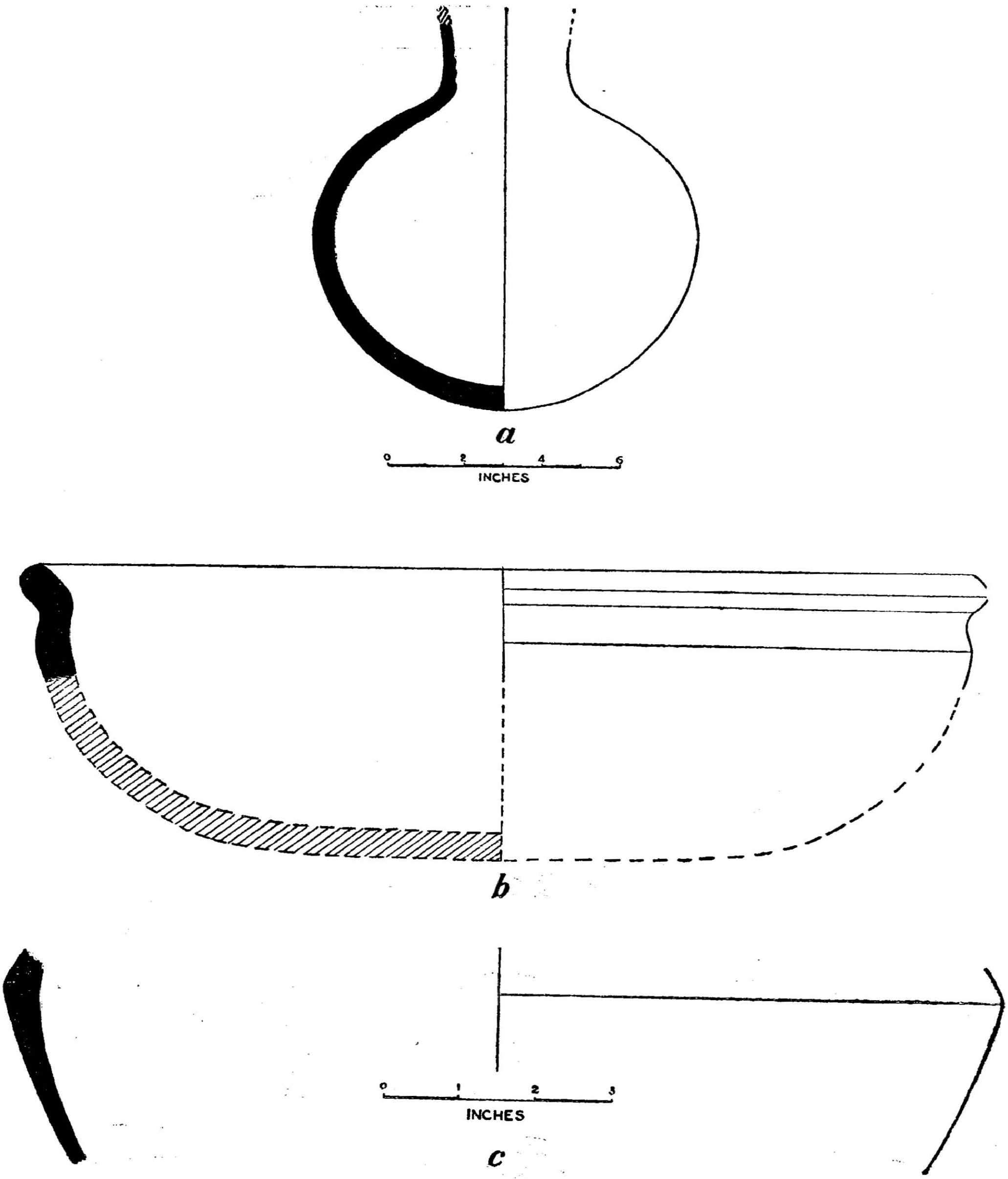


Fig. 2. Pottery Types, Layer 6, Nasik, Period I.
(*See p. 45*)

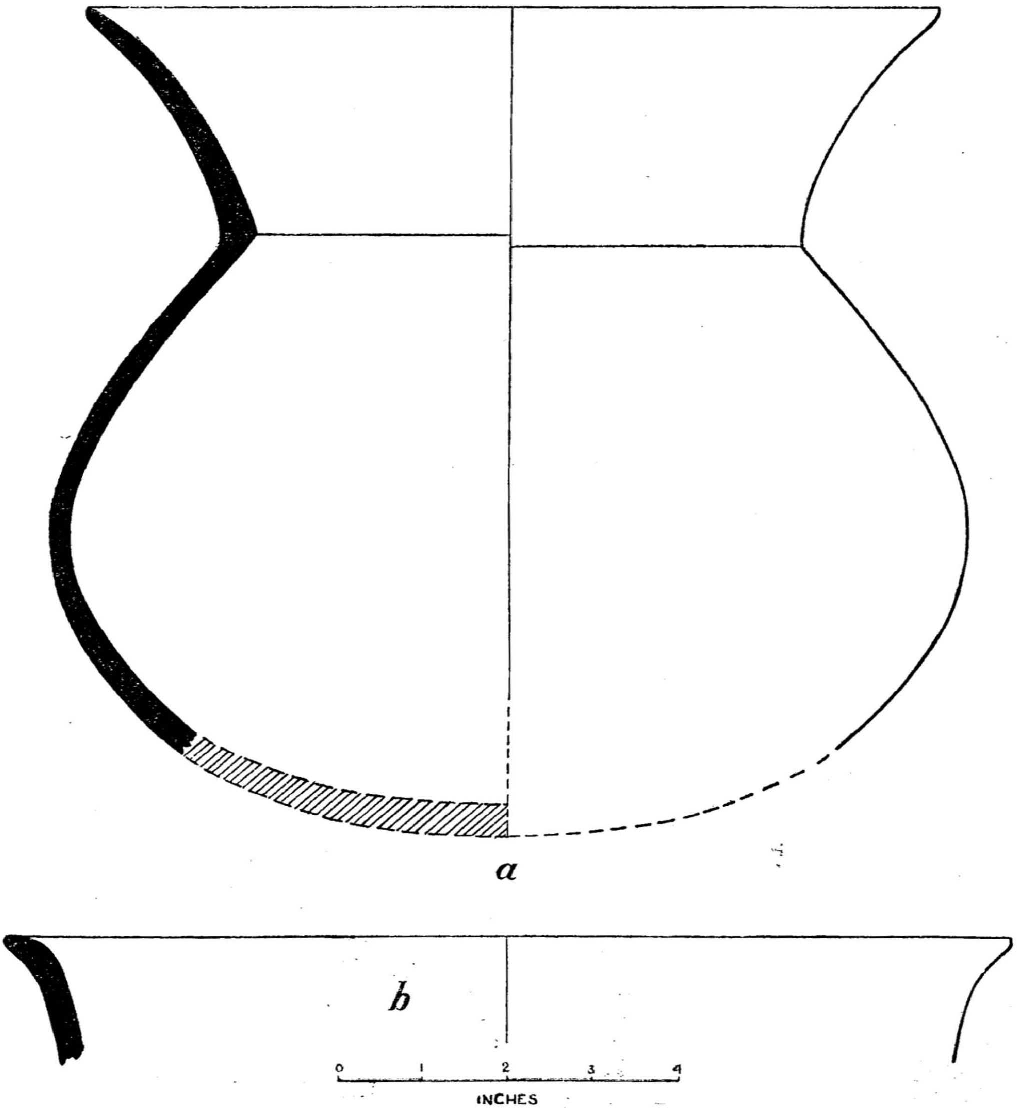


Fig. 3. Pottery Types, Grey Ware, (a) from Jorwe, (b) from Layer 6, Nasik, Period I.
(*See p. 45*)

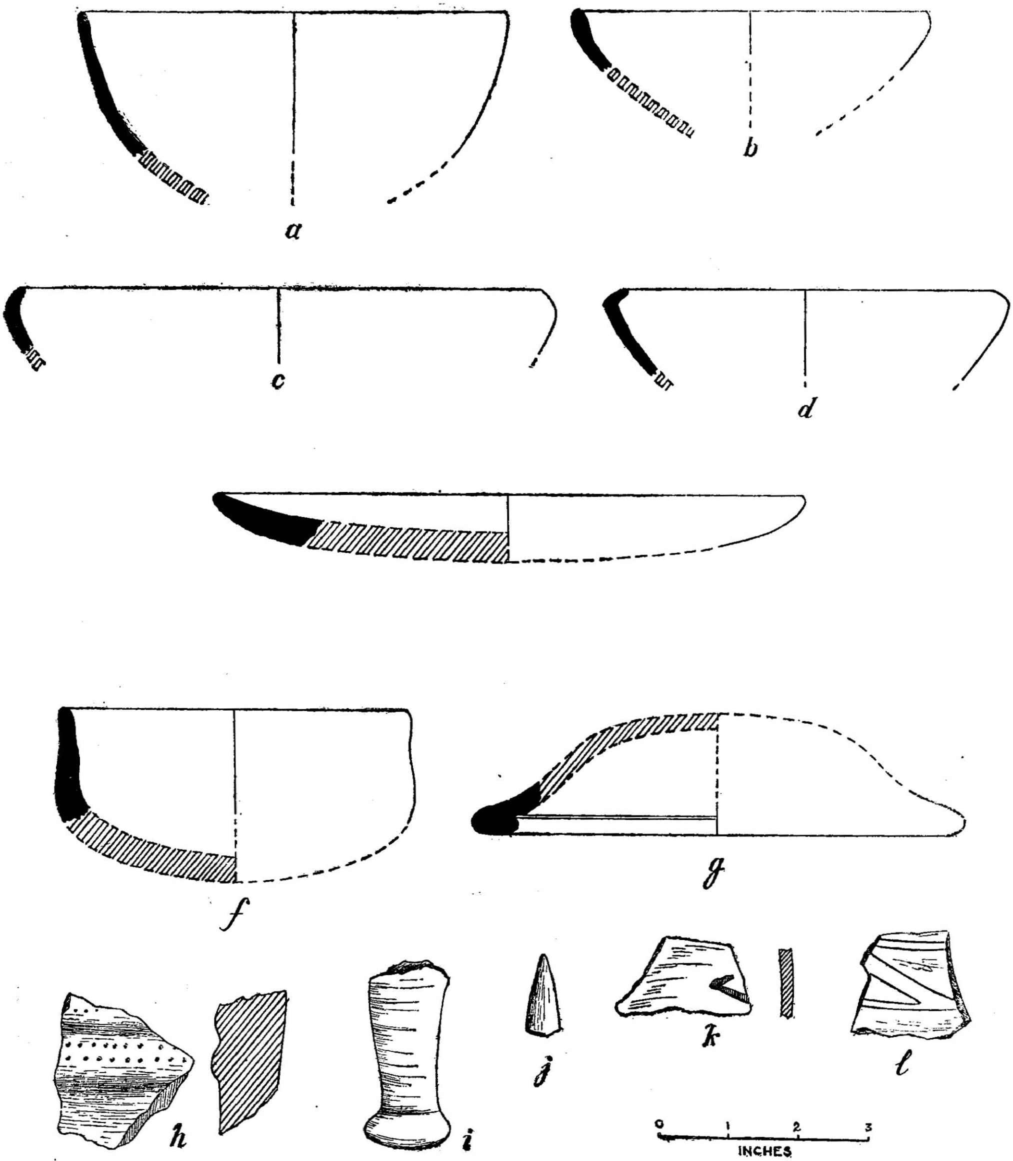


Fig. 4. Pottery Types, Bowls, Lids, Dishes, Layer 6, Nasik, Period I.

(*See p. 45*)

POTTERY

Fig. 1, a-g, and pl. IX

1a. Painted narrow-mouthed globular vessel. [See also pl. VIII, 1].

1b. Painted sherd with criss-cross pattern between two horizontal bands. [See also pl. IX, 8, left].

1c. Painted sherd with remains of broad black bordered bands filled in with vertical and horizontal thinner lines. [See also pl. IX, 8, right].

1d. Painted spout with slightly tapering end. [See also pl. IX, 6].

1e. Painted fragment of a carinated vessel. [See also pl. IX, 3].

1f. Painted sherd. [See also pl. IX, 9].

1g. Painted sherd. [See also pl. IX, 4].

Fig. 2, a-c

2a. Narrow mouthed globular vessel. [See also pl. VIII, 3].

2b. Fragment of a large, broad based bowl, having a rim-hold made by a slight concavity. Thick yellow ochre ware. No. 6599, MG.N. D(6).

2c. Sherd, probably of a rimless bowl with incurved edge, now broken, dark red, medium thick, coarse fabric. [See also pl. X, 6].

Fig. 3, a-b

3a. Large burial-urn-like vessel with flaring rim, and rounded bottom, Grey ware, smooth, thick fabric, from Jorwe. See below and pl. XXXV, 1.

[Cf. Brahmagiri,[1] *Anc. Ind.* No. 4, pl. CVIII, A, Fig. 20, T.37, p. 227].

3b. Rim fragment of thick smooth grey ware. [See also pl. X, 9].

Fig. 4, a-l

Pottery Types : Bowls, Dishes, Lids and Decorated sherds

4a. Fragment of a rimless, round based bowl, coarse gritty, grey ware, wheelmade. No. 6278, MG.N. B(6).

4b. Fragment of a rimless, narrow based bowl, coarse, gritty, grey ware, wheelmade. No. 6277, MG.N. B(6).

4c. Fragment of a rimless bowl or shallow dish with incurved edges, coarse, wheel-made. No. 6602, MG.N. D(6).

4d. Fragment of a rimless bowl, with incurved edges, coarse, light, dull red ware, handmade. No. 6601, MG.N. D(6).

4e. Fragment of a thick shallow dish or baking pan (*tavā*-like vessel), smooth ashy grey fabric. No. 6023, MG.N. A(6).

4f. Fragment of a bowl with a thick and slightly bulging lower part, broad rounded base and almost straight sides, bright orange coloured ocherous ware. No. 6001, MG.N. A(6).

4g. Probably fragment of a lid, yellow ocherous ware. No. 6597, MG.N. D(6).

4h. Sherd with raised band, incised with tiny holes, thick yellow ochre ware. No. 6275, MG.N. B(6).

1. Our impression of this similarity in fabric and type between Brahmagiri, Jorwe and Nasik was further confirmed by Shri B. B. LAL, Shri B. K. THAPAR, and Shri N. R. BANERJI, of the Archaeological Department of India, all of whom had the opportunity to handle the Brahmagiri as well as the Nasik-Jorwe material.

4i. Broken terracotta handle or stand, smooth yellow ochre surface, smoky core. No. 6284, MG.N. B(6).

4j. Small, pointed, cylindrical, terracotta object, possibly horn of an animal or leg. No. 6466, MG.N. C(6).

4k. Sherd with deep incised mark. (See also pl. X, 7.)

4l. Sherd of a thick orange coloured ware with a regular incised design of thin grooves joined by a thick oblique groove. No. 6735, MG.N. N.(4).

Fig. 5, a-o

Pottery Types : Rims of Medium and Broad Mouthed vessels

5a. Fragment of a rim with flaring top, yellow ochre ware. No. 6281, MG.N. B(6).

5b. Fragment of a rim with slightly flaring top, yellow ochre ware. No. 6460, MG.N. C(6).

5c. Fragment of a rim with slightly flaring top, yellow ochre ware. No. 6282, MG.N. B(6).

5d. Fragment of a broad mouthed, extremely thin rimless vessel with incurved sides, one half of the outer surface having orange coloured ochre wash. No. 6464, MG.N. C(6).

5e. Fragment of a vessel with almost straight narrow neck, and slightly flaring rim, yellow ochre ware. No. 6462, MG.N. C(6).

5f. Fragment of a vessel with a narrow mouth and a flaring rim, yellow ochre ware. No. 6459, MG.N. C(6).

5g. Fragment of a vessel with slightly externally beaded rim, yellow ochre ware. No. 6279, MG.N. B(6).

5h. Fragment of a vessel with thick beaded rim, yellow ochre ware. No. 6465, MG.N. C(6).

5i. Fragment of a vessel with well beaded rim, yellow ochre ware. No. 6600, MG.N. D(6).

5j. Fragment of a vessel with an externally beaded rim, having a slight drip, yellow ochre ware. No. 6007, MG.N. A(6).

5k. Fragment of a vessel with a rim, having an external angular drip projection, yellow ochre ware. No. 6008, MG.N. A(6). *This shape does not recur later.*

5l. Fragment of a vessel with slightly externally beaded rim, having a drip, yellow ochre ware. No. 6463, MG.N. C(6).

5m. Fragment of a broad mouthed vessel with a broad externally beaded rim, yellow ochre ware. No. 6003, MG.N. A(6).

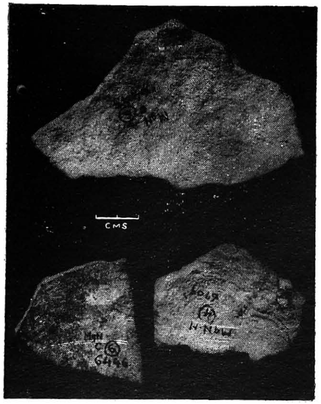
5n. Fragment of a vessel with externally beaded rim. The beading is faceted. Yellow ochre ware. No. 6461, MG.N. C(6).

5o. Fragment of a vessel, with slightly incurved top, yellow ochre ware. No. 6282, MG.N. B(6).

Period II

Northern Black Polished (N.B.P.) ware

In all 34 sherds were found, of which 28 come from the main trench (MG. N.). Their distribution is shown elsewhere. This reveals that 23 sherds belong to layers (4) and (5), that is, they can be assigned to Period II.



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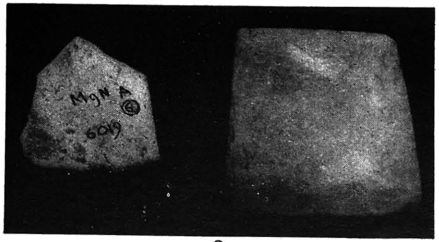

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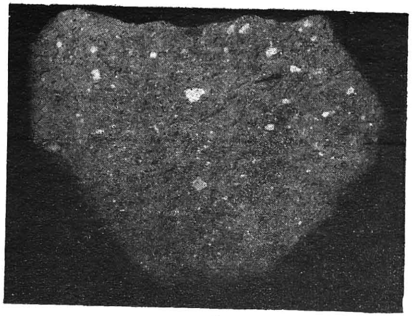

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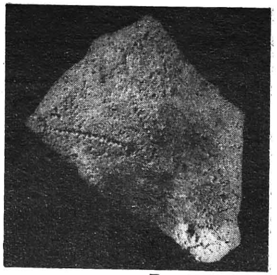

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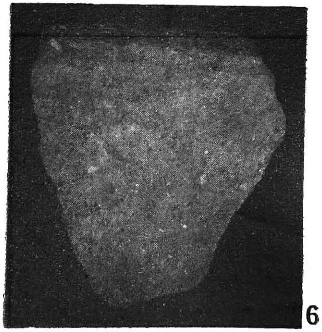

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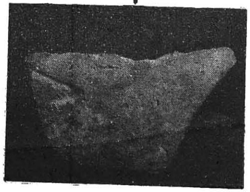

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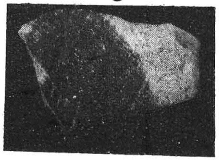

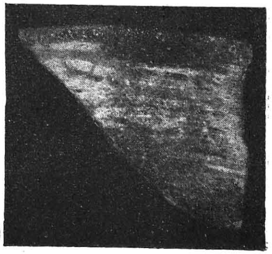

9

Potsherds (1-9). Period I. (*See pp. 43-44*)

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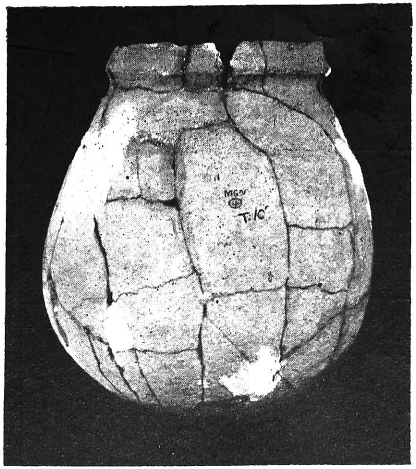

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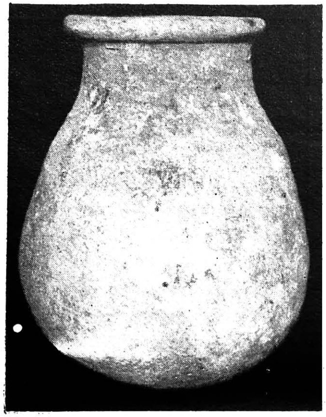

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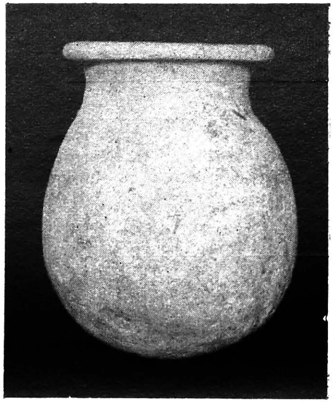

6

Pottery (Type-1) Period II. (*See p. 52*)

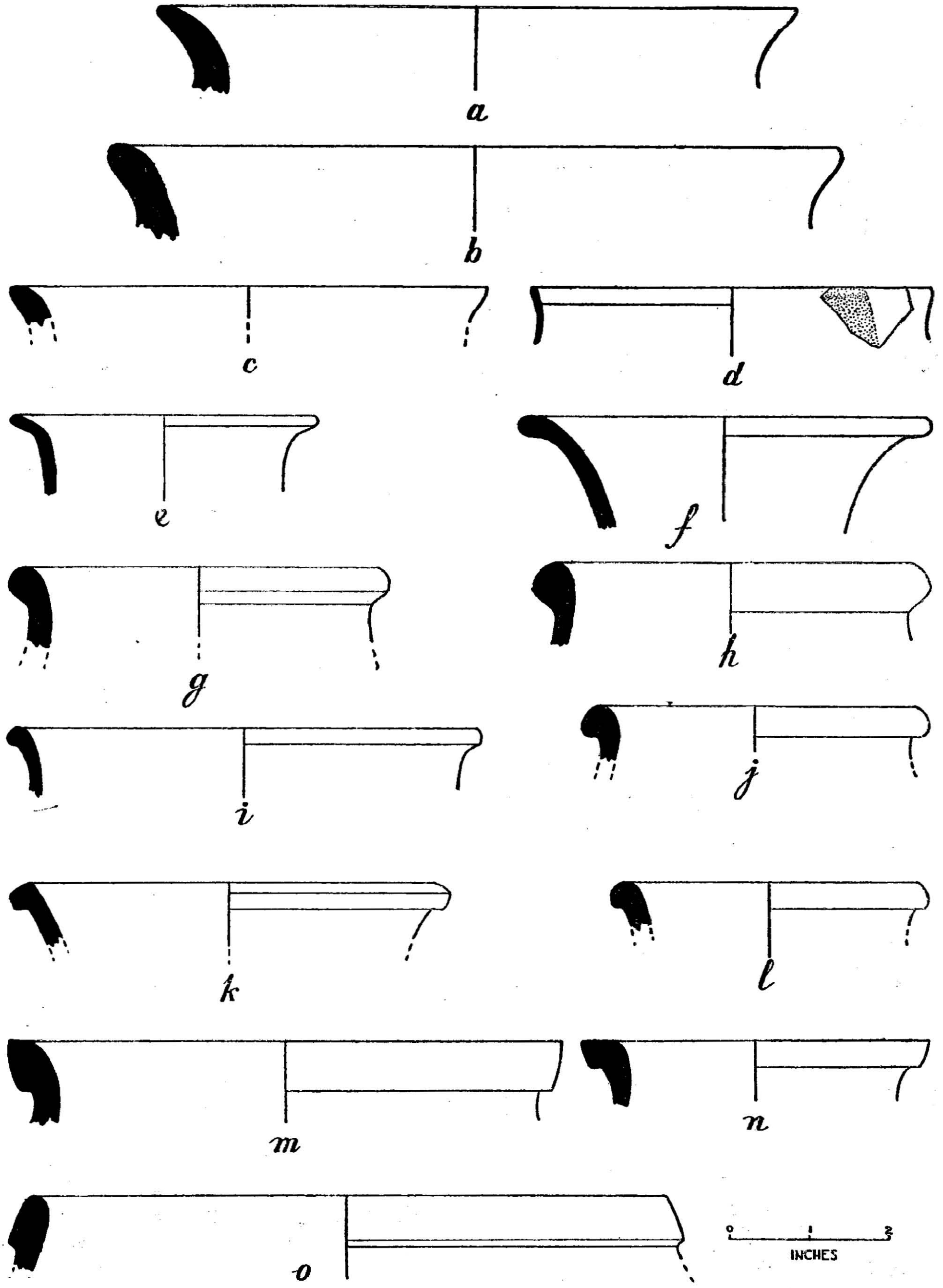

Fig. 5, Pottery Types, Rims of medium and broad mouthed vessels, Layer 6, Nasik, Period I.

(*See p. 46*)

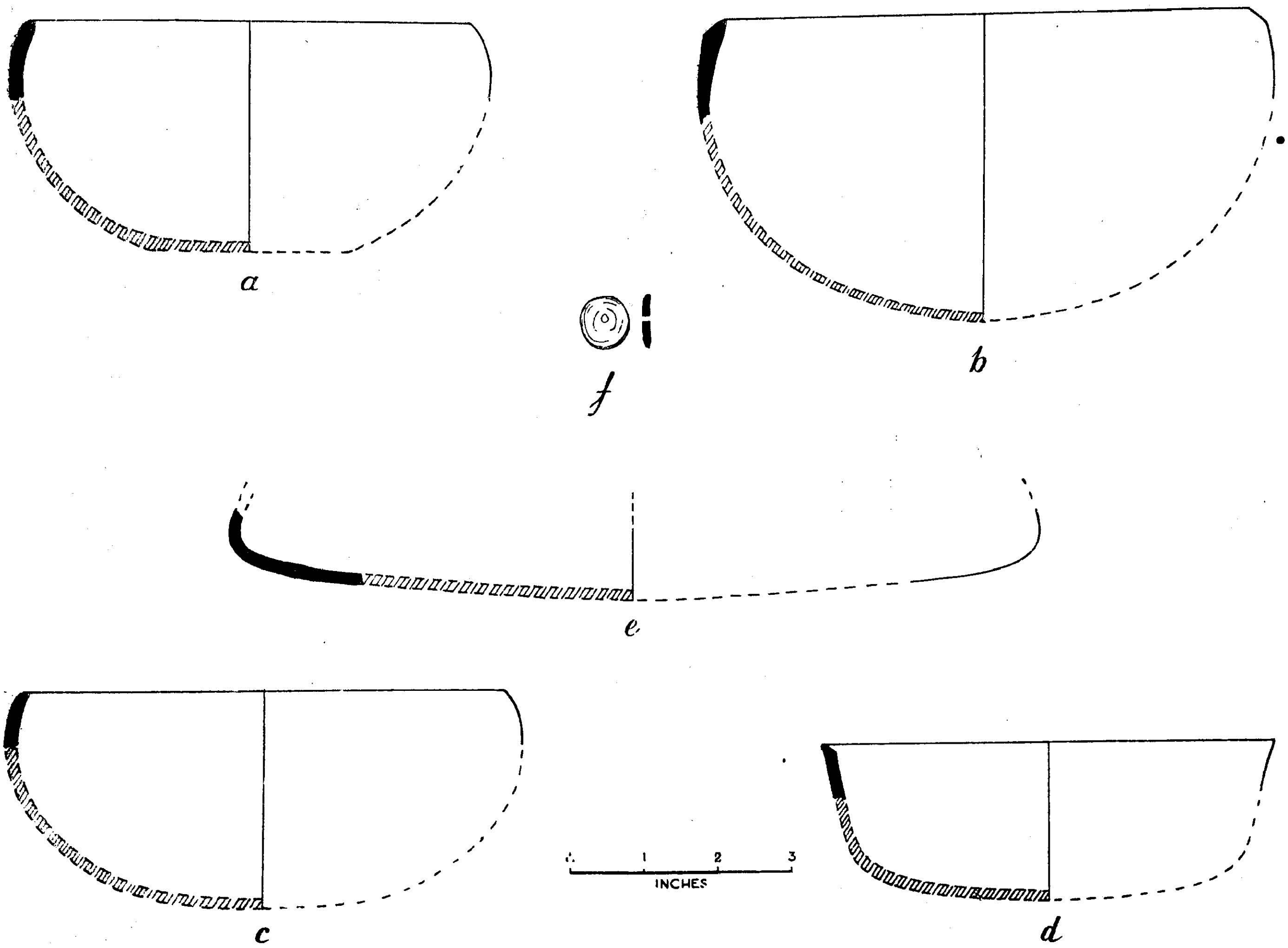

Fig. 6. Pottery Types, NBP, Layers 5 and 4, Nasik, Period II.

(*See p. 47*)

At Nasik two colour varieties are available. A large majority are of the lustrous black variety ; in the second the surfaces are shining ashy or silvery, one sherd having a pinkish shade as well. The core is dusty white, whereas the inner—original—surfaces are mostly reddish-grey. The sherds seem to represent at least three types of fabrics : viz. (1) thick or very thick fabric (7 mm.), (2) thick to medium (5 mm. to 4 mm.), and (3) thin, and very thin (3 mm. to 2 mm.).

Though no complete shapes can be reconstructed, four to five definitely distinct types occur. At the time of writing, not many shapes are known, and the evidence from Kosāmbi and Hastināpur is not available. However, comparing with the published material, it appears that four out of the five types from Nasik are new.

Fig. 6, a-f.

6a. Fragment, bowl with flat base and bulging sides. No. 615, MG.N. D(5). [Cf. *Anc. Ind.* I, Fig. 10, IX].

6b. Fragment, bowl, almost semi-circular, incurved, faceted edge. No. 379, MG.N. E(2) (Mixed stratum). *This seems to be a new type.* [Cf. *Anc. Ind.*, I, Fig. 10].

6c. Fragment, bowl, inturned sides, which slightly bulge. No. 745, MG.N. E(5). [Cf. *Anc. Ind.*, I, Fig. 10].

6d. Fragment, bowl with straight but flaring sides, slightly inwardly faceted, so as to have a thin, sharp edge. No. 404, MG.N. B(4).

6e. Fragment, dish having sides sharply inturned from the base. No. 745a, MG.N. E(5). *Probably a new type.*

6f. Round sherd, with a bored central hole, perhaps a toy or a spindle, 3 mm. thick, No. 521a, MG.N. E(5). From the western well.

STRATIGRAPHICAL DISTRIBUTION OF THE NORTHERN BLACK POLISHED (N.B.P.) WARE AT NASIK

Serial No. 1	Sherd No. 2	Site 3	Locus 4	Layer 5	Depth 6	Description 7	Figure 8
1	19	Nasik	MG.N. A	(2)	3 ft.	Light greyish black surface with a reddish streak on the outer surface. (4 mm.) thick.	
2	379	,,	E	(3)	5 ft. 5 in.	Fragment of rim, angularly inturned, with sharpened edge, colour as in 19, surfaces battered, showing the inner reddish background. (6-1/2mm.)	Fig. 6b.
3	491	,,	D	(3)	8 ft. 1 in.	Fragment, shining ashy colour. Thumb impression on the outer broken surface. (7 mm.).	
4	404	,,	B	(4)	8 ft. 2 in.	Fragment rim portion, colour as in 19. (4 mm.).	Fig. 6d.
5	538	,,	D	(4)	9 ft. 9 in.	Sherd similar in colour as 491. (3 mm.).	
6	260	,,	F	(4)	10 ft. 3 in.	Tiny fragment, shining pinkish ashy surface on both sides. (4 mm.).	
7	490	,,	B	(4)	10 ft. 7 in.	Tiny fragment, similar in colour to 19. (4 mm.).	
8	220	,,	B	(4)	10 ft. 7 in.	Tiny fragment, thin, similar in colour to 19. (3 mm.).	
9	689	,,	E	(4)	10 ft. 9 in.	Sherd, thin, colour as in 19. (3 mm.)	
10	635	,,	D	(4)	11 ft. 5 in.	Tiny fragment, shining ashy surface on both sides. (5 mm.).	
11	590	,,	D	(4)	11 ft. 6 in.	Tiny fragment, colour as in 19. (3 mm.).	
12	276	,,	C	(5)	11 ft. 8 in.	Tiny fragment, much thinner, less black than 19. (2 mm.).	
13	275	,,		(5)	11 ft. 8 in.	Tiny fragment less black than 19. (3 mm.).	
14-17	201 A-C four pieces	,,	A	(5)	12 ft. 4 in.	Four sherds of very thick fabric, with large patches of inner reddish background exposed. In one 201 B, the red forms part of the fabric as if by burning. The core is dark grey and not whitish grey. (7 mm.).	

STRATIGRAPHICAL DISTRIBUTION OF THE NORTHERN BLACK POLISHED (N.B.P.) WARE AT NASIK—*Contd.*

Serial No. 1	Sherd No. 2	Site 3	Locus 4	Layer 5	Depth 6	Description 7	Figure 8
18	203	Nasik	A	(5)	12 ft. 4 in.	Fragment, lustrous black surfaces, thin. (3 mm.).	
19	418	,,	B	(5)	12 ft. 6 in.	Tiny fragment, shining ashy surfaces. (4 mm.).	
20	693	,,	D	—	12 ft. 9 in.	Tiny fragment shining black surfaces. (4 mm.).	
21	745	,,	E	(5)	12 ft. 9 in.	Portion of rim, lustrous black surface, with convex outer and concave inner surface. (4 mm.).	Fig. 6c.
22	745a	,,		(5)		Fragment of a dish, black surfaces, which have lost their lustre, showing inner red background. (5 mm.).	Fig. 6e.
23	273	,,	A	(5)	13 ft. 4 in.	Fragment of rim of bowl or dish. Broken surface at rim, top shows the inner red background, thick fabric. (5 mm.).	
24-25	277-277a	,,	A	(5)	13 ft. 4 in.	Two tiny sherds, with greyish-red core and black surface, broken. (2 and 3 mm. respectively).	
26	202	,,	A	(5)	13 ft. 4 in.	The sherd has completely lost the black polished surface on one side. (5 mm.).	
27	274	,,	A	(5)	14 ft.	Fragment, black polish flaked off on both sides. (5 mm.).	
28	521	,,	B	(5)	16 ft.	Tiny sherd, black surfaces, very thick fabric. (7 mm.).	

Thus One N.B.P. sherd came from layer 2.
Four ,, sherds ,, ,, ,, 3.
Ten ,, ,, ,, ,, ,, 4.
Thirteen ,, ,, ,, ,, ,, 5.

Total 28

N.B.P. SHERDS FROM OTHER EXCAVATED AREAS AT NASIK.

Serial No. 1	Sherd No. 2	Site 3	Locus 4	Depth 5	Depth 6	Description 7	Plate 8
1	656	Nasik	MG.S.N.	(1)	3 ft. 10 in.	Sherd, with greyish colour, black-greyish-white core. (3 mm.).	
2	657	,,		(2)	4 ft.	Sherd, colour as in preceding. Light greyish white core. (5 mm.).	
3	736	,,	MG.E.N.	(1)	3 ft. 6 in. (top of stone pavement).	Sherd of a dish, with flat rim, black surface inside only, reddish grey outside. (5 mm.).	
4	769	,,	,,	(2)	5 ft. 4 in.	Sherd, much abraded, the inner colour is also worn out, reddish core. (4 mm.).	
5	854	,,	,, Ie	(2)	8 ft. 4 in.	Small thin sherd, dirty white core. (2 mm.).	
6	888	,,	,, Ic	(3)		Sherd, worn out with grooves and scratches on the inner surface, dirty white core. (5 mm.).	

Period II

According to the colour of the ware, the pottery from layer 5 may be classified into the following four classes :—

I. Red ware.
II. Black-and-Red ware.
III. Light Tan and Black ware.
IV. Ordinary Black ware.

This is also the order if the quantity of each ware is taken into account. In the number of types as well as in the quality of the sherds recovered, the Red predominates. Of the Tan ware, on the other hand, there are very few sherds and types.

From the point of view of quality, however, the order may be reversed. The Tan ware has generally a thinner body, is light in weight and smooth in touch with a burnished and at times polished surface.

The Black-and-Red ware has some types which are thinner and finer than the Tan ware. But it also includes thicker and often coarser Black ware types. This ware seems to be connected typologically and in technique, though not in finish, with the Black or Black-and-Red Megalithic ware.

The Red ware is on the whole inferior to the above two, include as it does types of vessels such as the storage jars (*rānjaṇ*), water-vessel (*maṭakā*), cooking vessel (*haṇḍī*) all for ordinary daily use. But there are exceptions. Vessels with thin walls and fine polished red surfaces also exist. The Red ware may be provisionally regarded as the local Nasik Pottery. In fabric it is totally different from the earliest Nasik ware. Similarities in types, however, between the earliest and the Black-and-Red, (particularly in the rimless bowl, and the dish with low incurved wall) may be discerned.

Red Ware

The Red ware consists primarily of vessels of ordinary, utilitarian use. Excepting, therefore, one or two types, the ware includes vessels having medium to thick walls, the surfaces of which are rarely, if at all, covered with any slip or wash, and polished. The natural surface is at times burnished, otherwise it is rough. The clay is generally gritty, coarse, and contains some amount of lime, sand and husk. Barring exceptions, it is usually wheel-made. The following are some of the most common shapes :—

(1) Gourd-shaped vessels, (2) Globular vessels with rounded base and narrow neck (*Ghaṭa*), (3) Broad-mouthed vessels with flat base, (4) Dishes or Lids (*Thālī* or *Ḍhānkan*), (5) Small water vessels (*Loṭā*), (6) Bowls (*Vāṭī*) and (7) Large Storage Jars (*Rānjaṇs*).

Type 1 Gourd-shaped vessels

Two vessels were recovered intact from the ring-well and three were reconstructed from sherds from the same spot. Thus there are five vessels. Though modelled after a gourd, they slightly differ in shapes from each other, and hence four are described as sub-types. Of medium thickness, they have a dull red, coarse surface, because these alone seem to be handmade. The upper portions, though not very regular, are turned on a wheel, and later fixed on to the handmade body. The following are illustrated :—

Fig. 7. (1, 1a-1d)

1. Gourd-shaped vessel, having an elongated bulging body, round bottom, slightly narrow neck with simple externally beaded rim, and an incomplete groove on the inner side. The clay is very coarse and contains large grains of lime. This is the most perfect of the group. No. 5729, MG.N. E(5). From the well. [See also pl. XI, 4].

1a. Gourd-shaped vessel, smaller than No.5729 (T.1), having a more shapely body, slightly angular shoulder, and beaded rim. Lighter in colour. No. 5727, MG.N. E.(5). From the well. [See also pl. XI, 6].

1b. Gourd-shaped vessel, with an elongated body, very irregular in outline, with blotchy surface. The beaded rim is deeply cut. No. 5728, MG.N. E(5). From the well.

1c. Gourd-shaped vessel, with elongated body. Whether because it was pressed or what, soon after it was made, it has a pronounced irregular outline. It has no rim, but there is a collar-like projecting band near the top. No. 352, MG.N. A(5). [See also pl. XI, 3].

Do. MG.N.(4) [pl. XI, 2].

1d. Gourd-shaped vessel, with a very much elongated body, round bottom, and externally beaded rim. No. 5728a, MG.N. E(5). Fragments (Nos. 6436, 6497, 6449, 6455, 6494). [See also pl. XI, 5].

Fig. 8. (2, 2a-g)

Type 2 Globular vessels

Of this type mostly sherds have been found. Excepting a fine red vessel, not enough sherds were recovered to determine the exact shape in all cases. But the size—thickness and diameter—of the rims gives some idea of the vessels they represent. The rims, however, are varied in shapes. These thus form the sub-types.

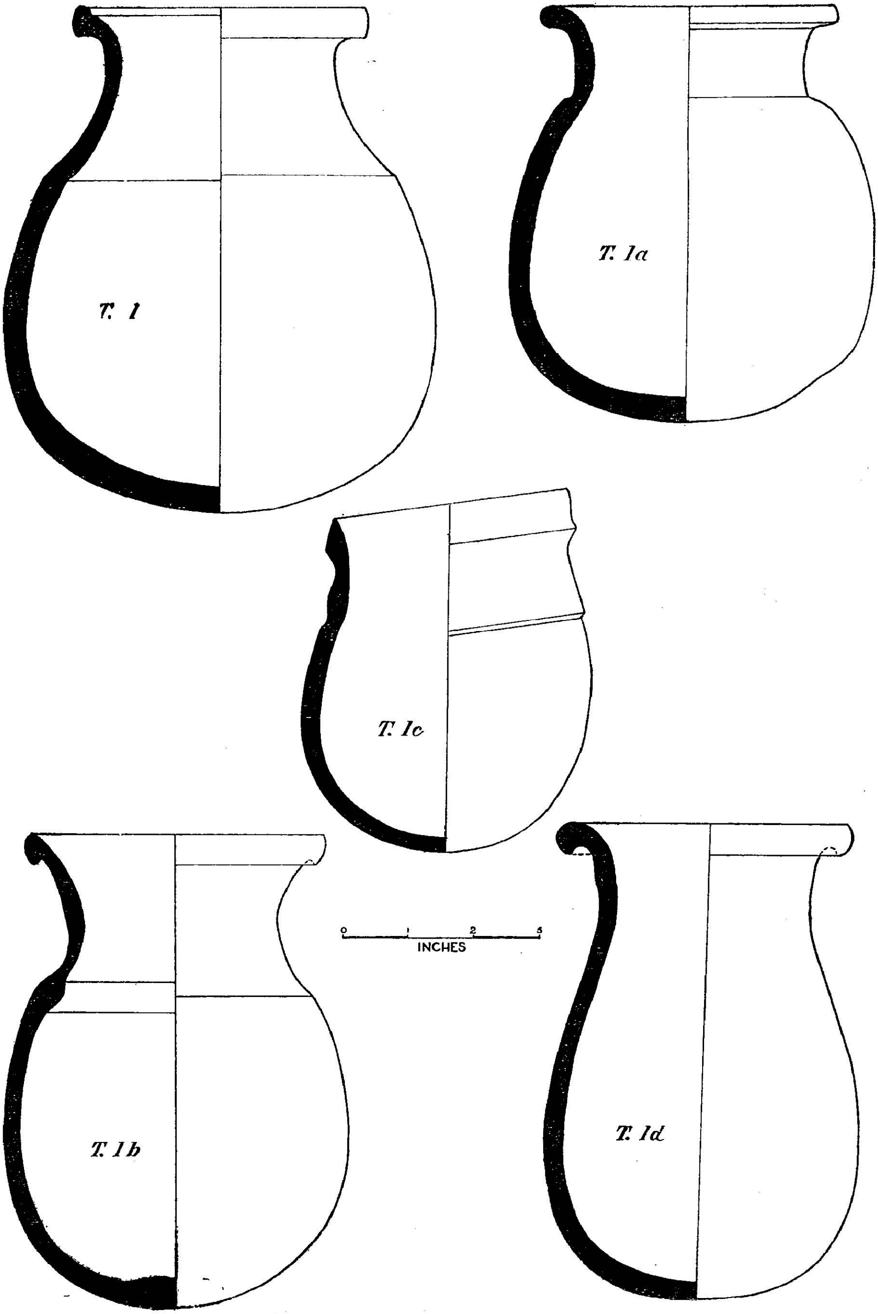

Fig. 7. Type 1. Red Ware (Gourd-shaped Vessels), Layer 5, Nasik, Period II. (A)

(*See p. 52*)

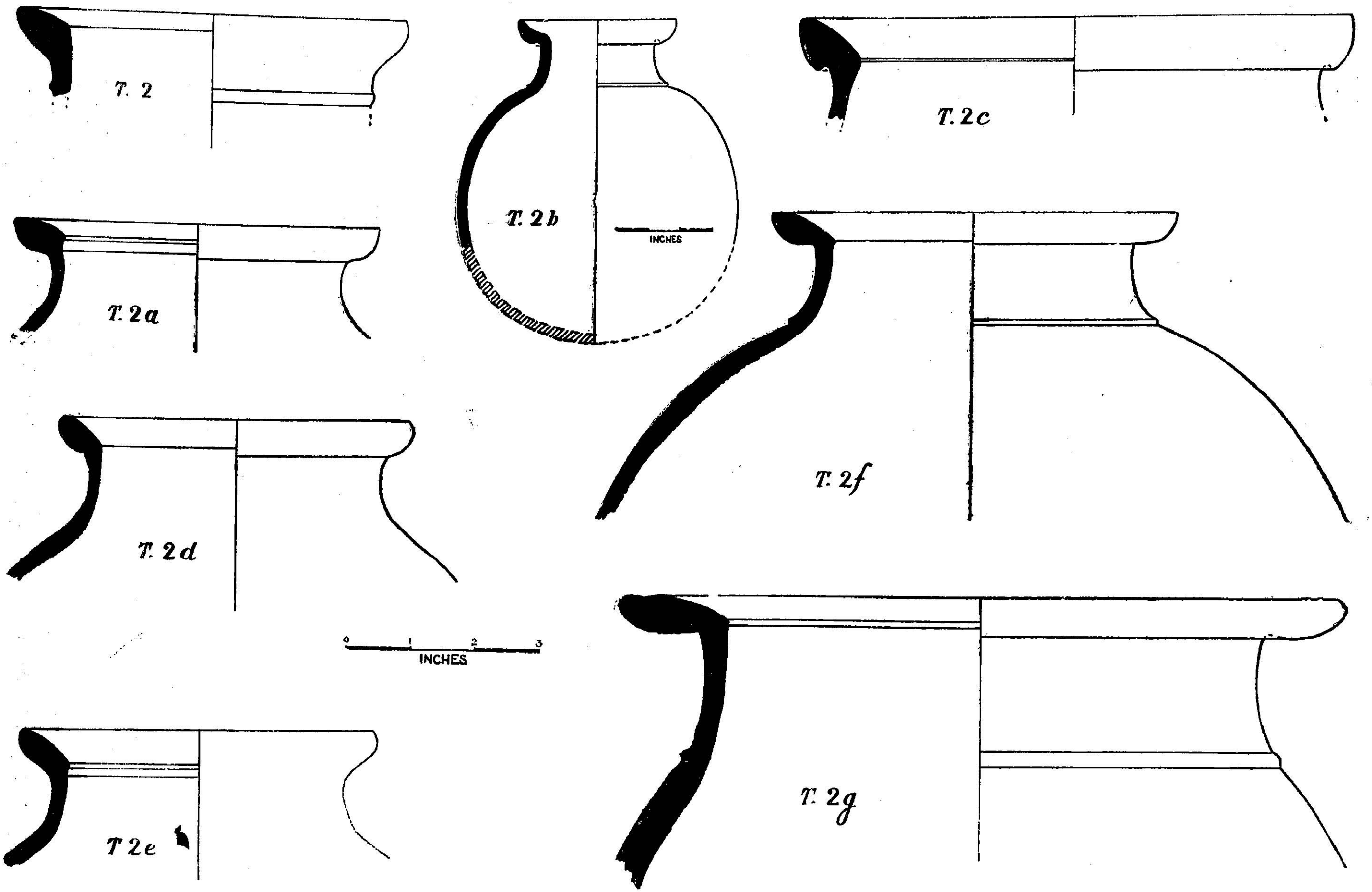

Fig. 8. Type 2. Red Ware, (Globular Vessels?), Layer 5, Nasik, Period II. (A)

(*See pp.* 52-53)

PLATE XII

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2

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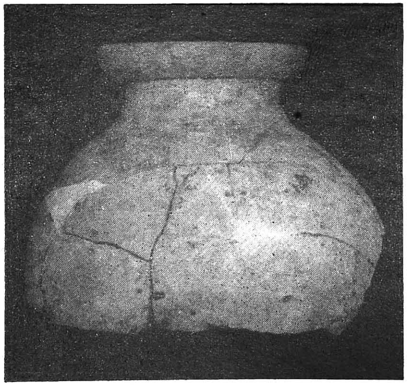
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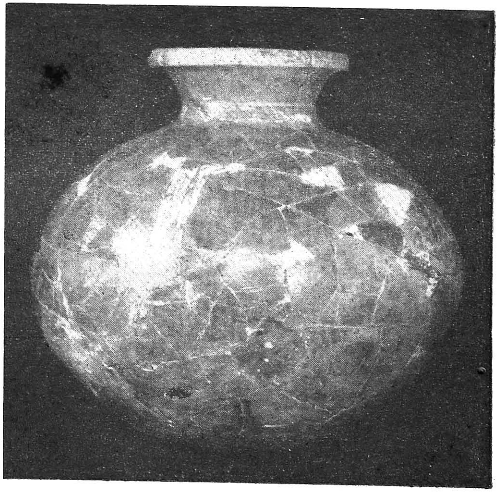
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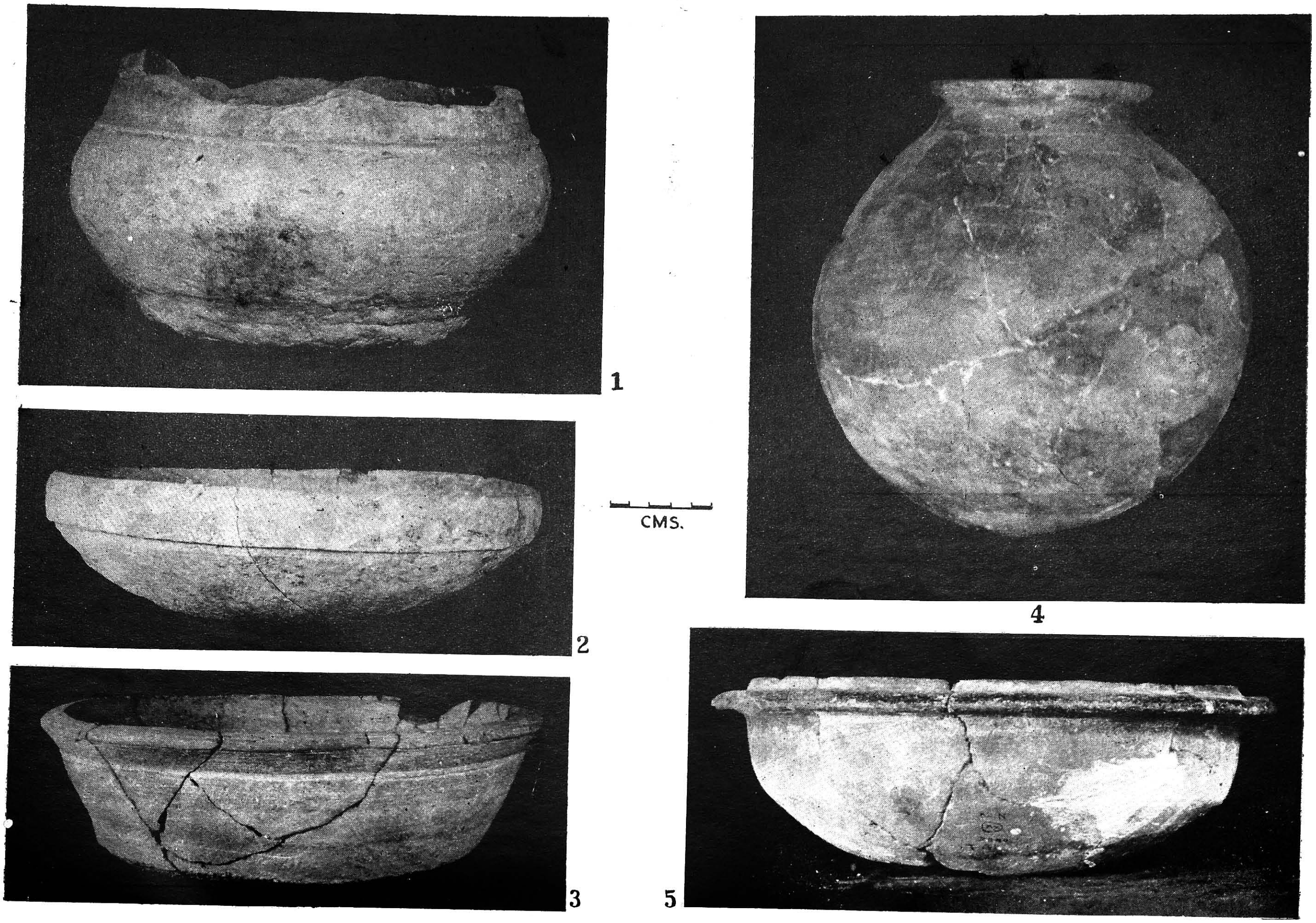
Pottery (Types 2, 5, 9). Period II.

(*See pp. 53-54*)



Pottery (Types 16, 18a, 126, 26, 41'). Period II (*See pp. 57, 58, 60, 65, 68*)

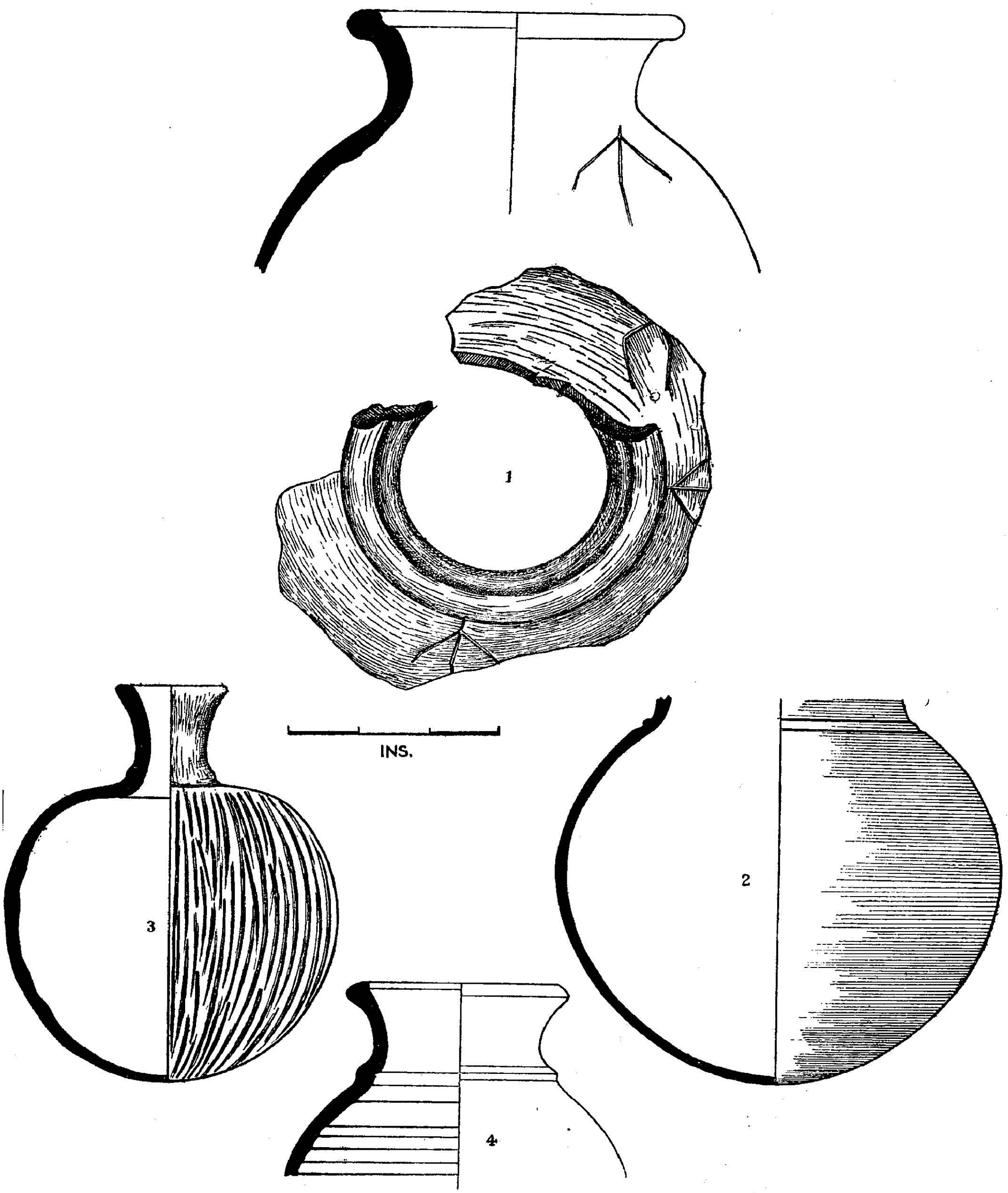


Fig. 8a. Red Ware (specialised ware).

(*See p. 84*)

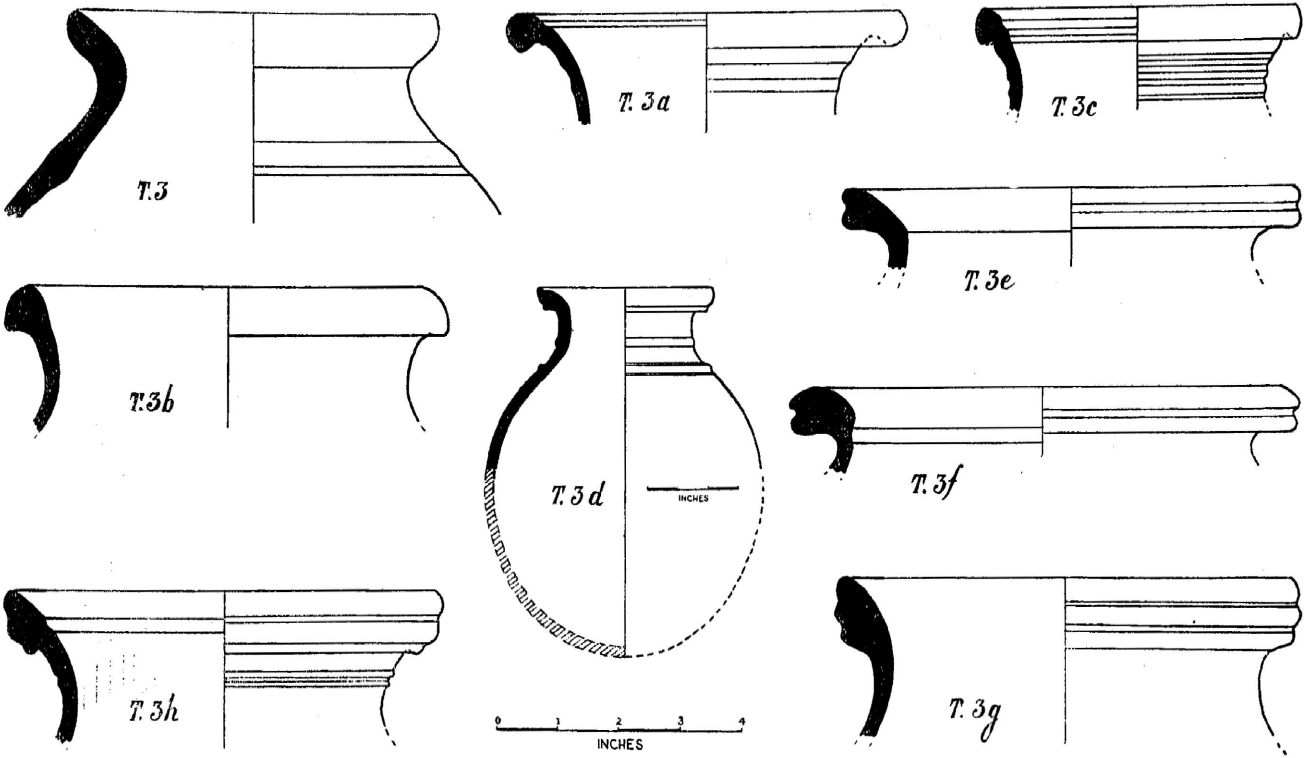


Fig. 9. Type 3. Red Ware (Globular Vessels ?). Layer 5, Period II (A).

(*See p. 53*)

2. Fragment, rim broad at the top and then gently sloping inwards with a thin groove, and a raised band round the neck. No slip or wash, but burnished smooth over the red surface. No. 6071, MG.N. A(5).

2a. Fragment, rim, almost similar to above, but of coarser fabric, and without burnishing and decoration. No. 6076, MG.N. A(5).

2b. Complete upper half of a pale salmon-coloured globular vessel with a cut rim, and thin groove round the shoulder. Coarse surface, without slip or wash. The inner side below the neck has a very uneven blackish surface. No. 5205, MG.N. E(5). From the well. [pl. XII, 4].

2c. Fragment, rim, similar to above, with the cut below the rim-base more marked. Fine bright-red slip over a coarse surface. No. 6131, MG.N. A(5).

2d. Fragment, rim, similar to above but without a cut at the base of the rim. No slip and coarse exterior. No. 6494, MG.N. E(5). From the well.

2e. Fragment, similar to No. 6495, but with four grooves round the neck. Smooth dark brown exterior. No. 6482, MG.N. E(5). From the well.

2f. Fragment, rim, having a flatter top, and three narrow grooves on the shoulder. No. 6504, MG.N. E(5). From the well.

2g. Fragment, rim, of a large vessel. The rim is very broad and flat, with a shallow groove at the edge and raised band round the shoulder. The top of the rim as well as the exterior is beautifully burnished to give it a smooth, shining appearance. No. 6433, MG.N. E(5). From the well.

Fig. 9. (3, 3a-3h)

Type 3 Globular vessels

3. Fragment, rim of a short, narrow necked vessel. The rim is almost identical with that of T.2, but slightly thicker and rounded. This becomes more pronounced in its sub-types. Hence it is distinguished from T.2. The vessel had no slip or wash and was moderately burnished. No. 6069, MG.N. A(5).

3a. Complete top of rim, with a shallow cut at its base and thin grooves round the neck. Traces of red wash over an otherwise coarse light red surface. No. 5203, MG.N. (5).

3b. Fragment, rim, externally beaded, coarse, dirty red surface. No. 6075, MG.N. A(5)

3c. Fragment, rim externally beaded and cut, with grooves round the neck, inside and outside. Dull red, well burnished surfaces. No. 6082, MG.N. A(5).

3d. Complete upper half of a dark red globular vessel with blackened middle part. It has a slightly flaring cut rim with a groove at its base and a shallow raised band on the shoulder and neck; lightly burnished. No. 5204, MG.N. E(5). [pl. XII, 2; for a large variety pl. XII, 1].

3e. Fragment, rim with a groove around cutting it into two. The vessel had a bright red slip and smooth burnished surfaces. No. 6079, MG.N. A(5).

3f. Fragment, rim, similar to T. 3e, but with the cut around the rim deeper. Fabric also similar. No. 6120, MG.N. A(5).

3g. Fragment, rim, with two deep grooves round the rim. Coarse red fabric, moderately burnished, but without a slip. No. 2700, MG.N. G(5).

3h. Fragment, rim with two grooves round the rim, and a deep cut at its base, and shallow bands round the neck. Dark crimson red, coarse fabric, burnished but without a slip. No. 2701, MG.N. G(5).

Fig. 10. (4, 4a-4g)

Type 4

In this type the rim is internally slightly concave and convex outside and gradually develops a drip or a cut at its base. It resembles the cymarecta, an inverted moulding of the base of a temple or its pillar.

4. Fragment, rim, externally beaded and cut with a slightly raised band round the neck, dull red coarse fabric without slip. No. 6133, MG.N. A(5).

4a. Fragment, rim externally beaded with a raised band round the narrow neck. Internally the rim is not concave, but flares out. Bright red fine fabric with a uniform slip and well burnished into a smooth surface. No. 6133a, MG.N. C(5).

4b. Fragment, rim of a slightly larger vessel. Fabric etc. as in No. 6133, MG.N. A(5).

4c. Fragment, rim, with an internal groove and a raised band round the neck. Internally the rim is not concave but tends to flare out. Dull red fabric, with traces of red slip. No. 6091, MG.N. A(5).

4d. Fragment, rim, decorated with two grooves around the rim, with notches in between, and then with a groove inside, and vertical notches on the neck. Red slip, burnished smooth. The notches were made after both these processes were gone through. No. 4204, MG.N. G(5).

4e. Fragment, rim, with a slightly concave neck and thinner flaring rim. Red slip over a coarse fabric and then burnished smooth. No. 6078, MG.N. A(5).

4f. Fragment, rim, externally beaded with a groove inside and deep cut at base outside. Red slip and smooth burnished surface. No. 6088, MG.N. A(5).

4g. Fragment, rim, with a slight convexity inside and externally having projected pointed beading. Red slip and smooth but now cracked burnished surface. No. 6148, MG.N. A(5).

Fig. 11. (5, 5a-5b)

Type 5

5. Large fragment of rim, neck and shoulder of a coarse, dirty brown ware. Four grooves round the high neck. Moderately burnished. No. 6498, MG.N. E(5). From the well.

5a. Fragment, rim and neck of a large vessel. The neck is narrow and rim flaring with externally cut beading, a raised band round the neck, and two grooves round the shoulder and a shallow groove inside just below the edge of the rim. Thick bright red coating over a coarse gritty surface smoothed by burnishing. No. 6486, MG.N. E(5). From the well.

5b. Almost a complete vessel, with low, small, narrow neck and a globular body, with rounded base. The rim has a groove just below the edge on the inside and an external cut beading. The vessel has bright, polished red surface and was made out of well levigated clay and had received an uniform red coating. It is one of the few finer vessels in Red Ware and is now fully reconstructed. No. 6432, MG.N. E(5). [See pl. XII, 5].

Fig. 12. (6, 6a-6f)

Type 6

This type includes small vessels, generally of finer fabric. The rim is rounded and not exactly beaded as in Type 5.

6. Fragment, rim of a small vessel, light red slip, burnished, with smooth surfaces. No. 6106, MG.N. A(5).

6a. Fragment, flaring rim of a slightly larger vessel than No. 6106. Bright red slip, but surfaces rather coarse. No. 4378, MG.N. B(5).

6b. Fragment, rim, neck and part of shoulder, blackish red, smooth surfaces, due to burnishing over a slipped surface. No. 6541, MG.N. E(5). From the well.

6c. Fragment, rim and neck with grooves round the lower part of the neck, inside and outside. Light red slip, with smooth surface. No. 5232, MG.N. D(5).

6d. Fragment (in two pieces) rim, and neck, the rim has got a pointed beading. Fine bright red smooth surface owing to burnishing on red slip. The clay is also well levigated. No. 4336, MG.N. B(5).

6e. Fragment in three pieces of rim and neck. The rim is similar to that in No. 4336, but has grooves round the neck. Light red, moderately smooth surface. No. 6515, MG.N. E(5).

6f. Fragment, rim of a straight necked vessel, with grooves. Rim sharply beaded and cut. Blotchy red smooth surface. No. 6484, MG.N. E(5). From the well.

Fig. 13. (7, 7a-7b; 8, 8a-8e)

Type 7 Straight Necked vessels

Only a very few sherds of this type were found. Since the middle or lower parts are not known, it is difficult to say how the complete vessels looked.

7. Fragment of a straight necked rimless vessel. Bright red slip with smooth surfaces. No. 4624, MG.N. F(5).

7a. Fragment, almost similar to No. 4624. No. 4609, MG.N. D(5).

7b. Fragment of a rimless vessel with a neck. Light, fine fabric with traces of bright red slip with smooth surfaces. No. 4605, MG.N. B(5).

Type 8

In this type the vessels have a globular body but generally a flat base.

8. Fragment, globular part of body and flat base. Shallow corrugation on the inside towards the base end. Bright red slip with a burnished smooth surface. No. 5234, MG.N. D(5).

8a. Fragment, similar, but coarser fabric without slip. Not illustrated. No. 4547, MG.N. (5).

8b. Complete small vessel, having globular body, flat base, rimless, constricted neck, very coarse, a light brown fabric, without any slip. No. 5207, MG.N. D(5). [pl. XIV, 6].

8c. Fragment, globular part only. Thin, very light, pale brown fabric. The thin coating of slip is now disappearing. No. 4616, MG.N. D(5).

8d. Fragment, everted rim and upper half of the body. Very coarse light brown fabric, smoothed by a slight burnishing. No. 6465, MG.N. E(5).

8e. Fragment, flat base and part of lower body only. Coarse light exterior, but the interior is coated with crimson red slip. No. 4532, MG.N. D(5).

Fig. 14. (9, 9a-9c)

Type 9

Vessels with short neck, outturned rim, carinated shoulder, and rounded base. *Cf.* Also similar type in Tan and Ordinary Black ware, Fig. 27, Type 40, and Fig. 28, Type 43.

9. Fragment, neck, rim and body. A raised band, and two grooves round the narrow neck. Outturned rim and well carinated body. No. 5236, MG.N. E(5). From the well, [Cf. Identical type in Black Ware and Tan Ware No. 6450].

9a. Fragment, rim, possibly of this type of vessel. Bright red smooth surfaces. No. 6517, MG.N. E(5). From the well.

9b. Fragment, rim, and carinated body. There is no neck and the rim is outturned. Shallow grooves round the top of shoulder, well carinated body. The vessel has coarse red surface, with slip, above the carination, and black below. Inside, however, it was uniformly coarse red. No. 6512, MG.N. E(5). From the well. [See pl. XII, 3, for an identical type from layer (4).]

9c. Fragment, rim, and part of the shoulder. Fabric thinner, but coarse with a thin wash. No. 6765, MG.N. D(5).

Fig. 15. (10, 10a-10c; 11, 11a; 12)

Type 10 Broad Mouthed vessels with Rounded Base

10. Half of a broad mouthed vessel with a little bulging body and rounded base. Slightly beaded rim. Grooves on the shoulder. Light, coarse, red surface, without slip. No. 354, MG.N. B(5). [pl. XIV, 5].

10a. Fragment of a vessel, similar to above. The rim is now beaded. Grooves round the shoulder, and one inside. Fabric also similar. No. 4615, MG.N. G(5).

10b. Fragment of a vessel, similar to above. Only one groove round the body. Fabric similar but smoother. No. 6440, MG.N. E(5).

10c. Fragment, rim, and part of bulging body of a dish or large bowl, with a beaded rim. Smooth, burnished red surface with slip half way above the bulge and rim, but black below both inside and outside. No. 6764, MG.N. C(5).

Type 11 Rimless Bowls

Comparatively a few sherds of intact rimless bowls in red ware have been recovered. As a result there are not many sub-types, but each seems to represent a type by itself.

11. Fragment of a rimless bowl, with slightly bulging body, incurved sides, flat base. Coarse fabric with red slip inside and outside. No. 5236, MG.N. D(5).

11a. Fragment of a very small rimless bowl with slightly bulging body. Shallow groove round the edge on the outside. Light brown coarse fabric, with traces of red slip inside. No. 6458, MG.N. (5).

Type 12 Bowl with Ringed Base.

12. Fragment of a large rimless bowl with incurved top, and flat ringed base. Coarse dirty brown ware. No. 6451, MG.N. E(5). From the well.

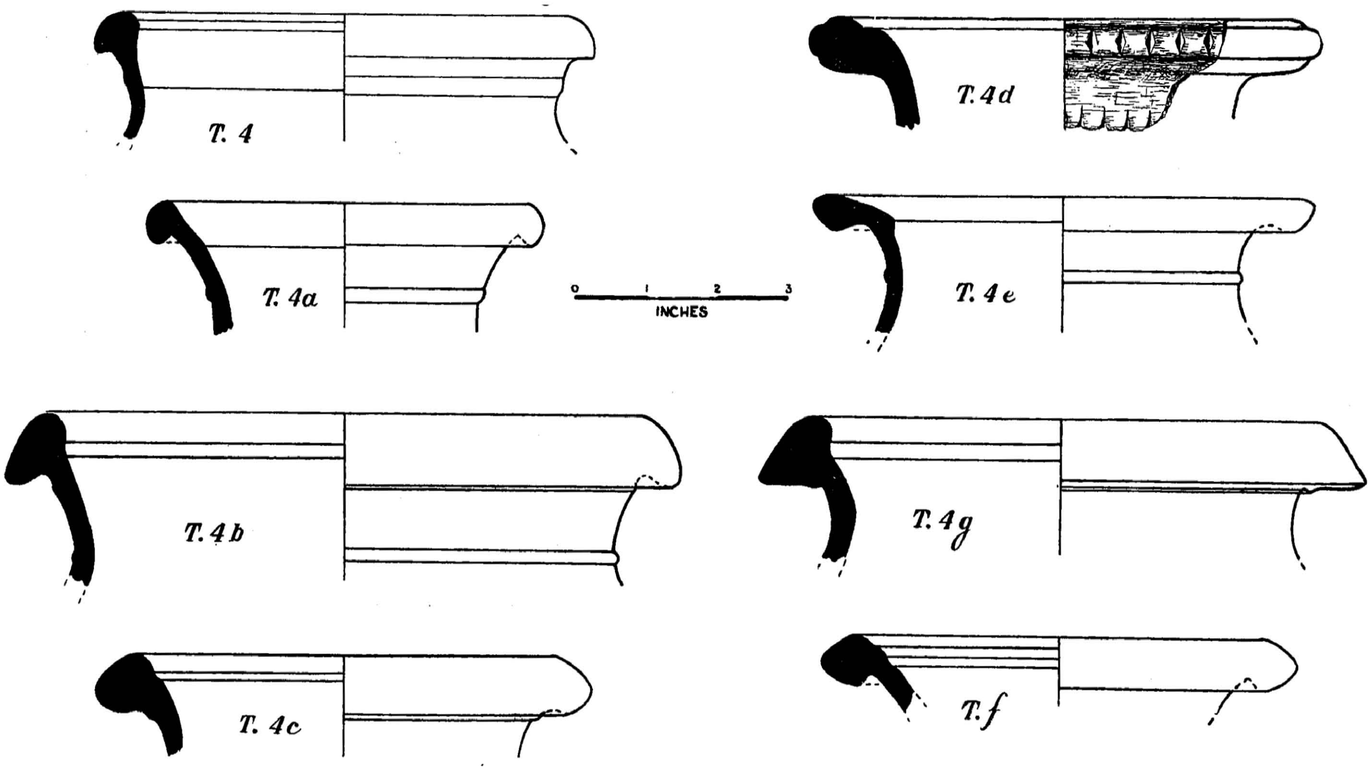


Fig. 10. Type 4. Red Ware (Globular Vessels?). Layer 5, Period II (A).

(*See p. 54*)

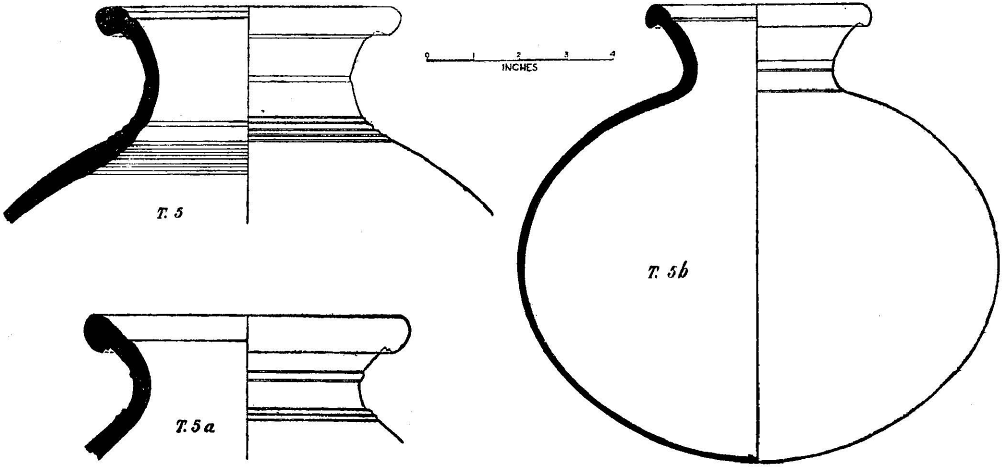
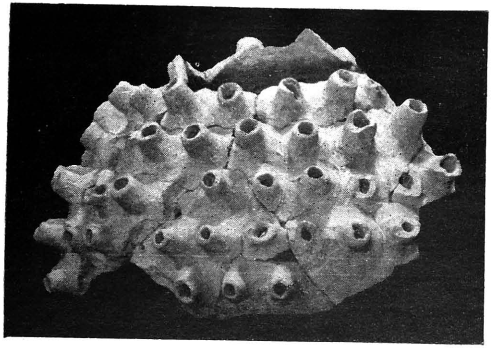


Fig. 11. Type 5. Red Ware (Globular Vessels). Layer 5, Period II (A).

(*See p. 54*)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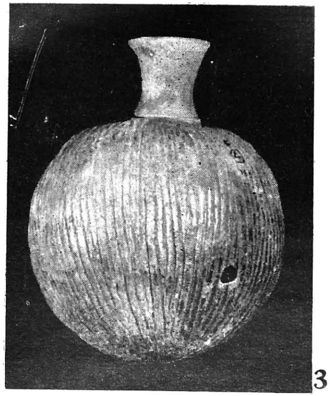
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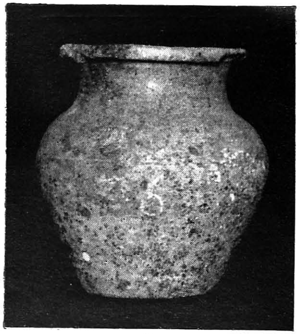
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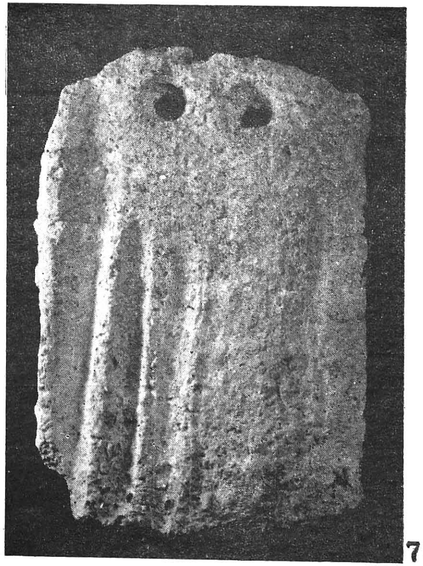
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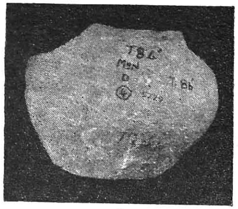
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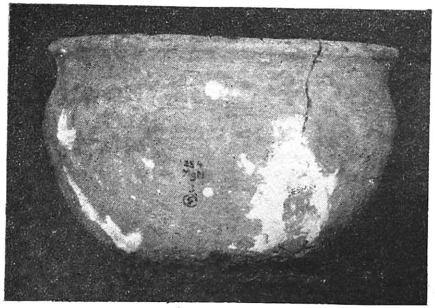
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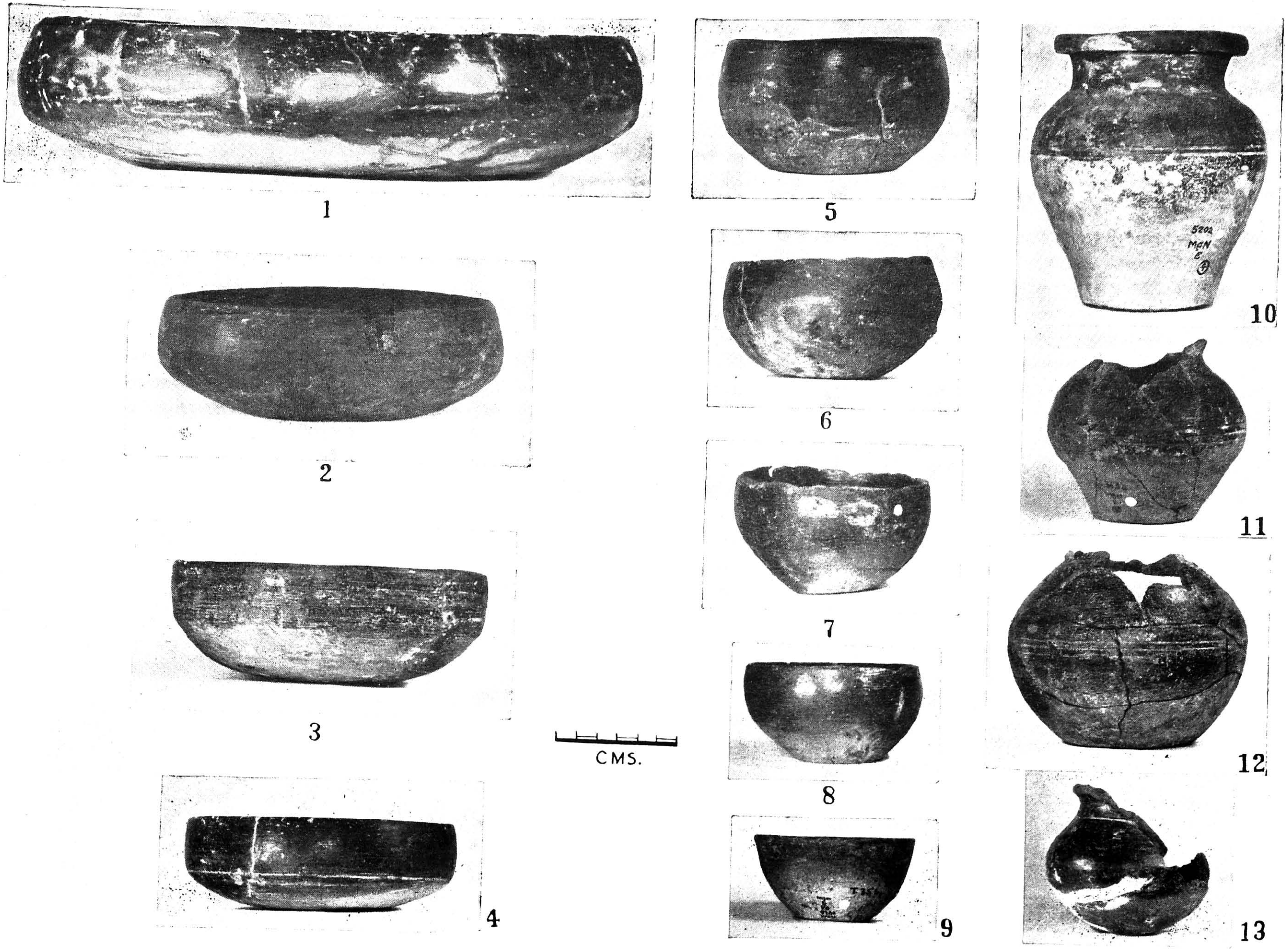
6

Pottery (Types 42, 8'b, 10, 8b). excepting No. 1 (Period IV) and No. 7 Tile (Period II), the rest of the Period II. (*See pp. 55, 56, 65, 67, 84*)



Pottery (Types 37, 35, 27, 33, 34). Black-and-Red Ware. Period II. (*See pp. 61, 62, 63, 64*)

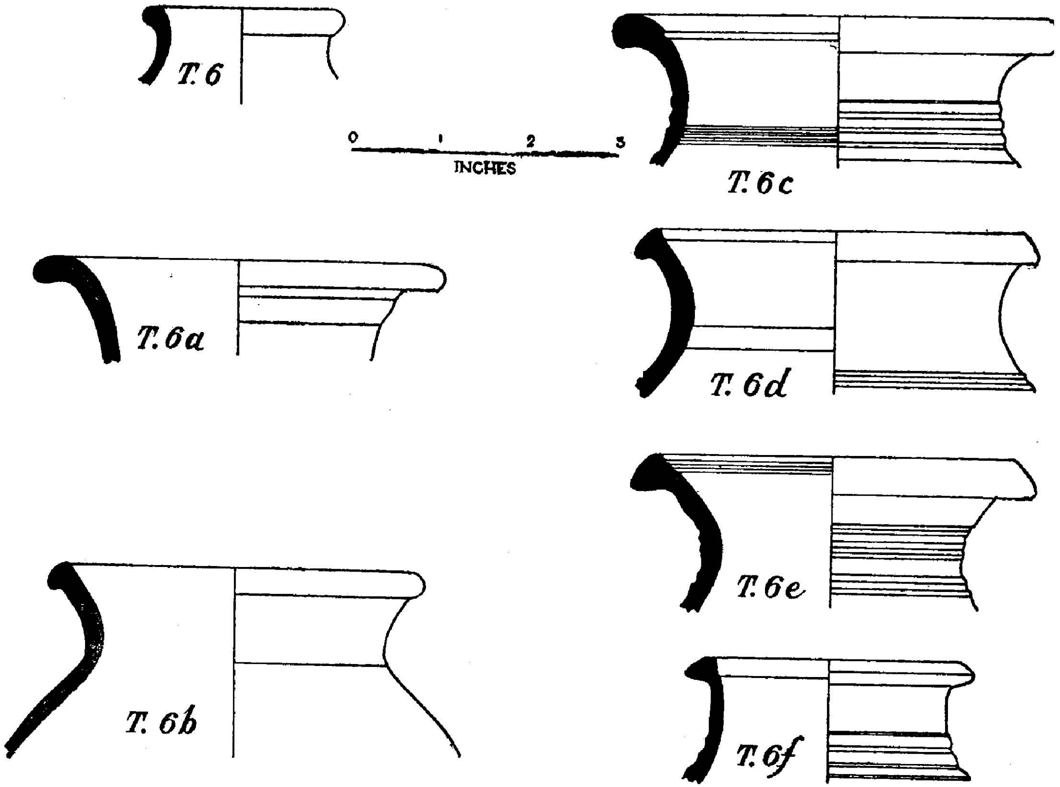


Fig. 12. Type 6. Red Ware (small Globular (?) Vessels). Layer 5, Period II (A).

(*See pp. 54-55*)

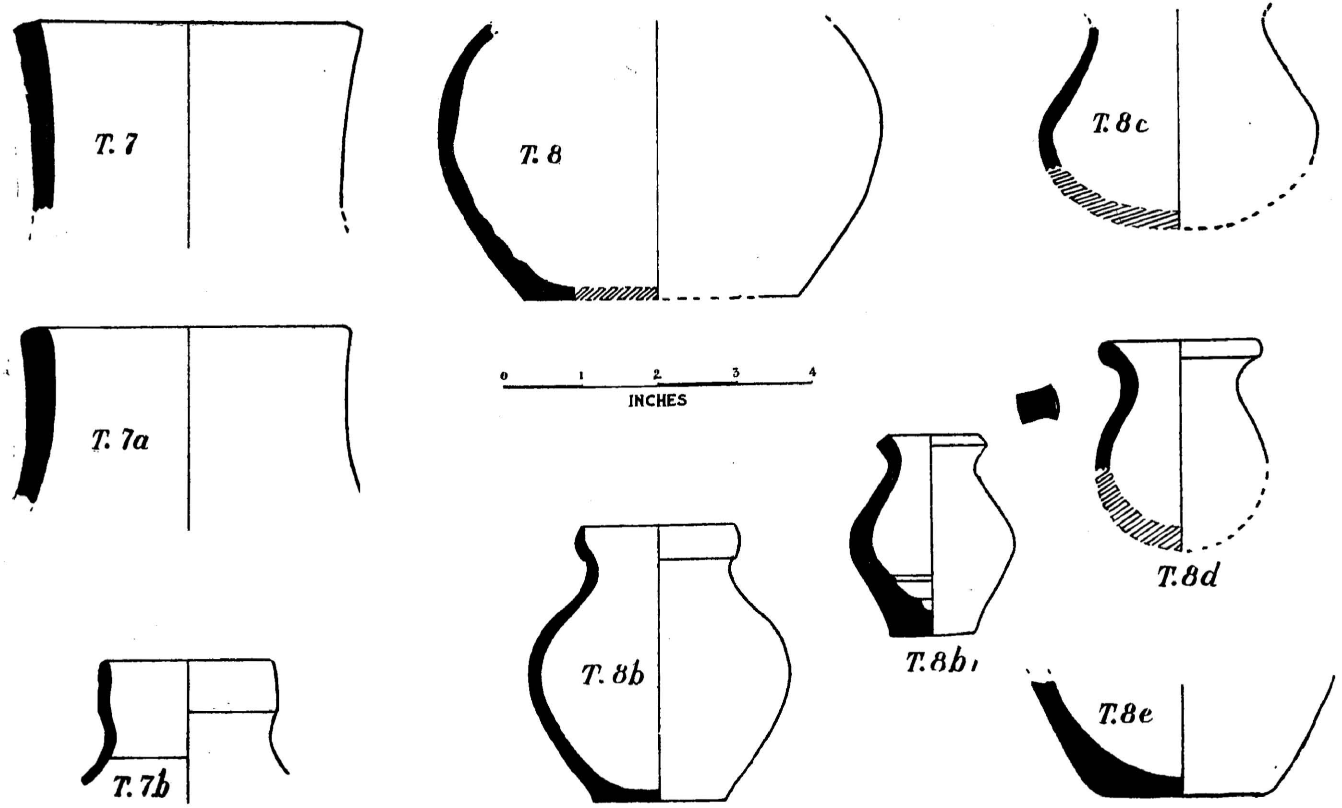


Fig. 13. Type 7-8. Red Ware (Straight necked and other vessels). Layer 5, Period II (A).

(*See p. 55*)

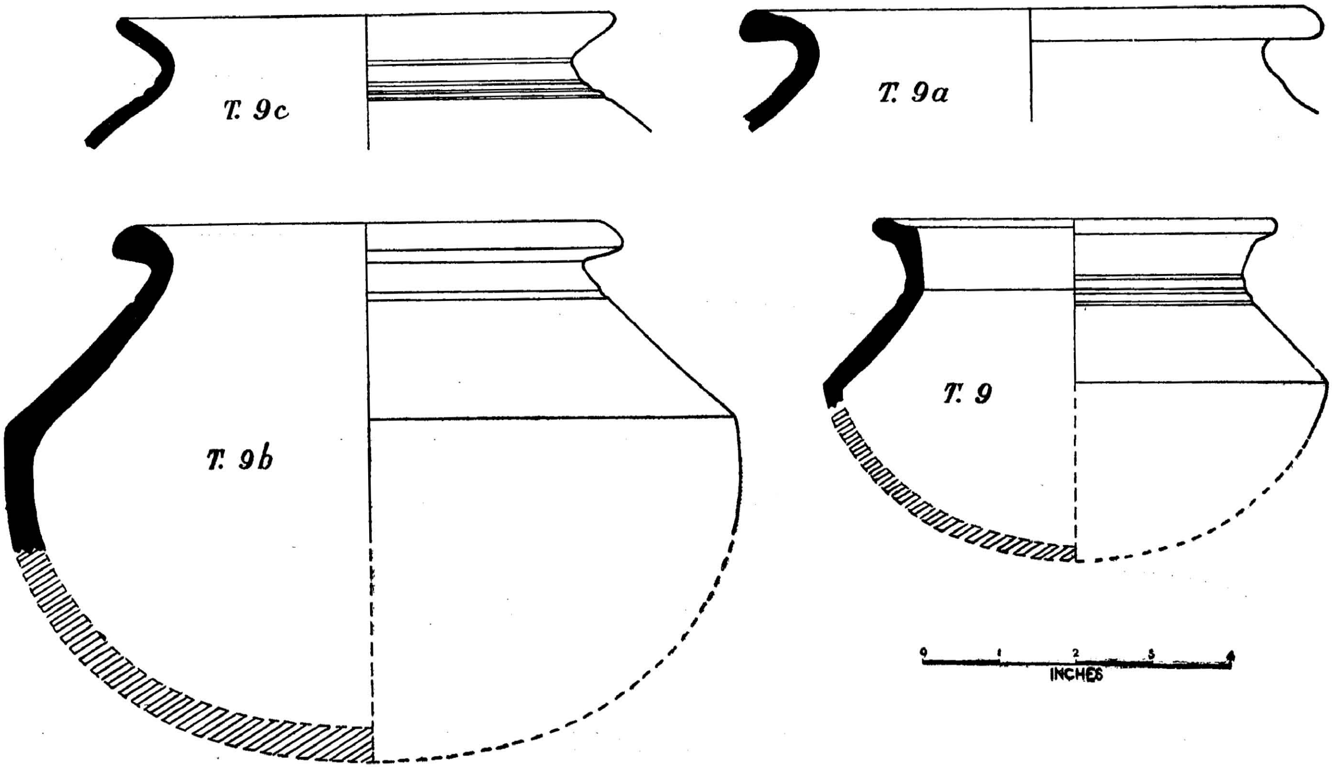


Fig. 14. Type 9. Red Ware (vessels with carinated shoulder). Layer 5. Period II (A).

(*See p. 56*)

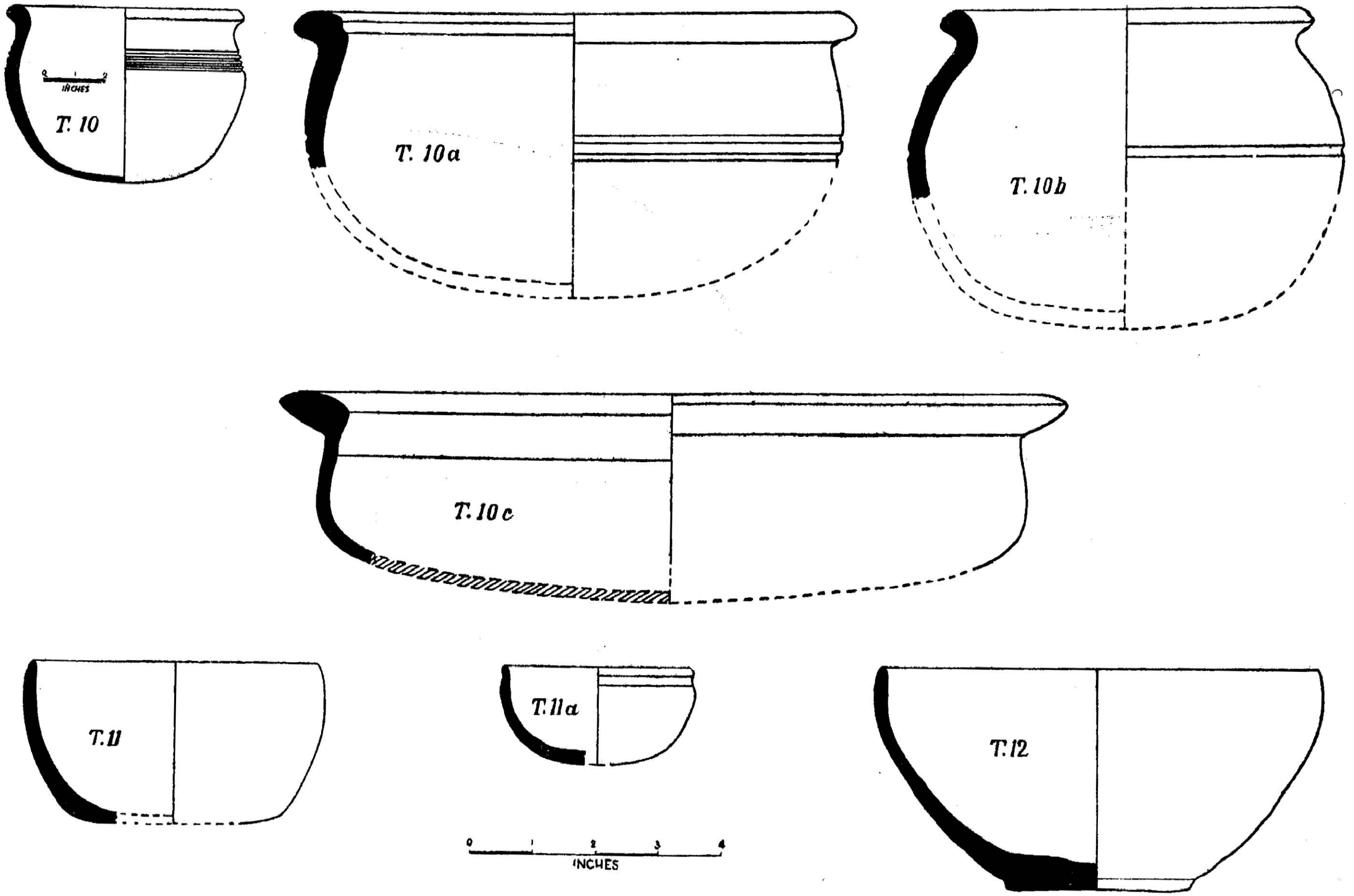


Fig. 15. Types 10-12. Red Ware (Bowls and Dishes). Layer 5. Period II (A).

(*See p. 56*)

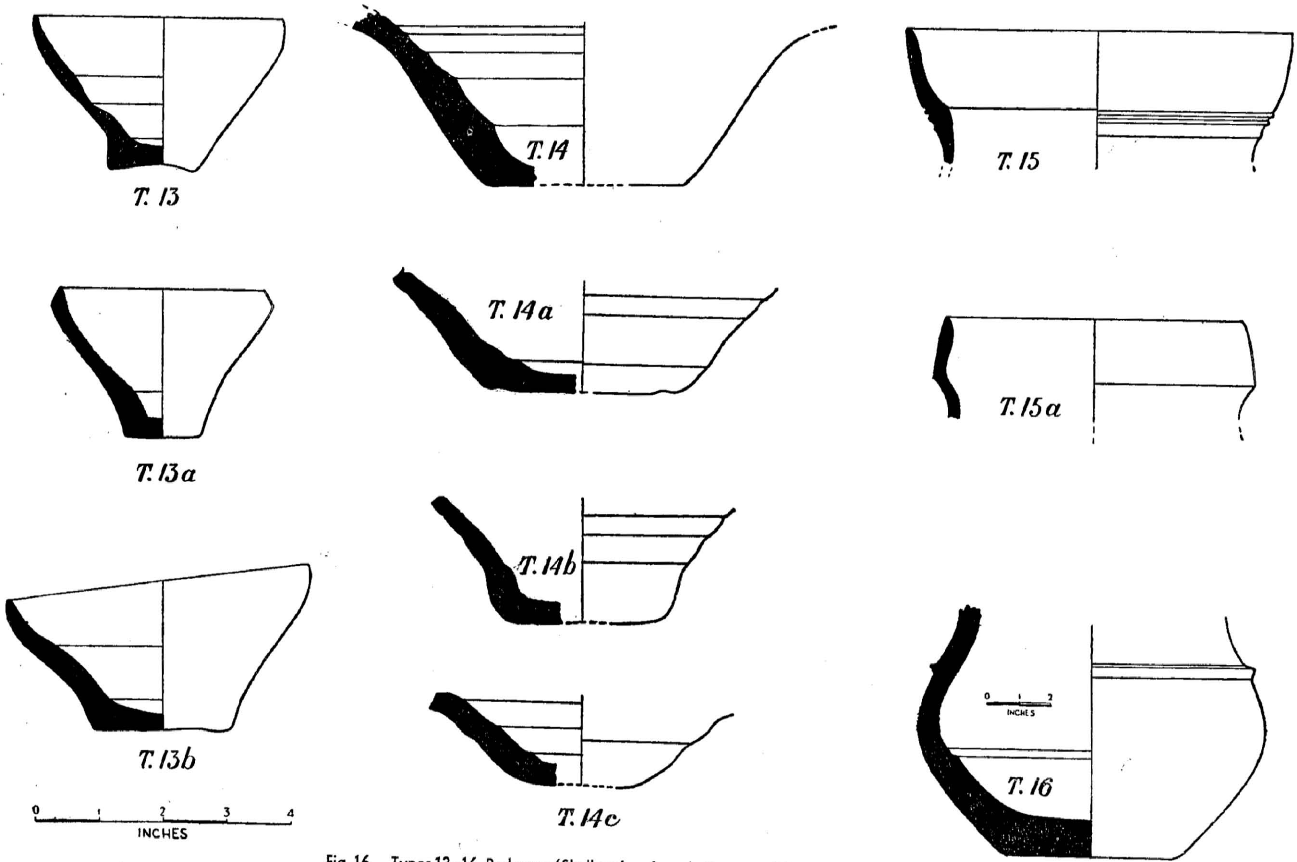


Fig. 16. Types 13–16. Red ware (Shallow bowls and other vessels). Layer 5, Period II (A).
(*See pp. 57-58*)

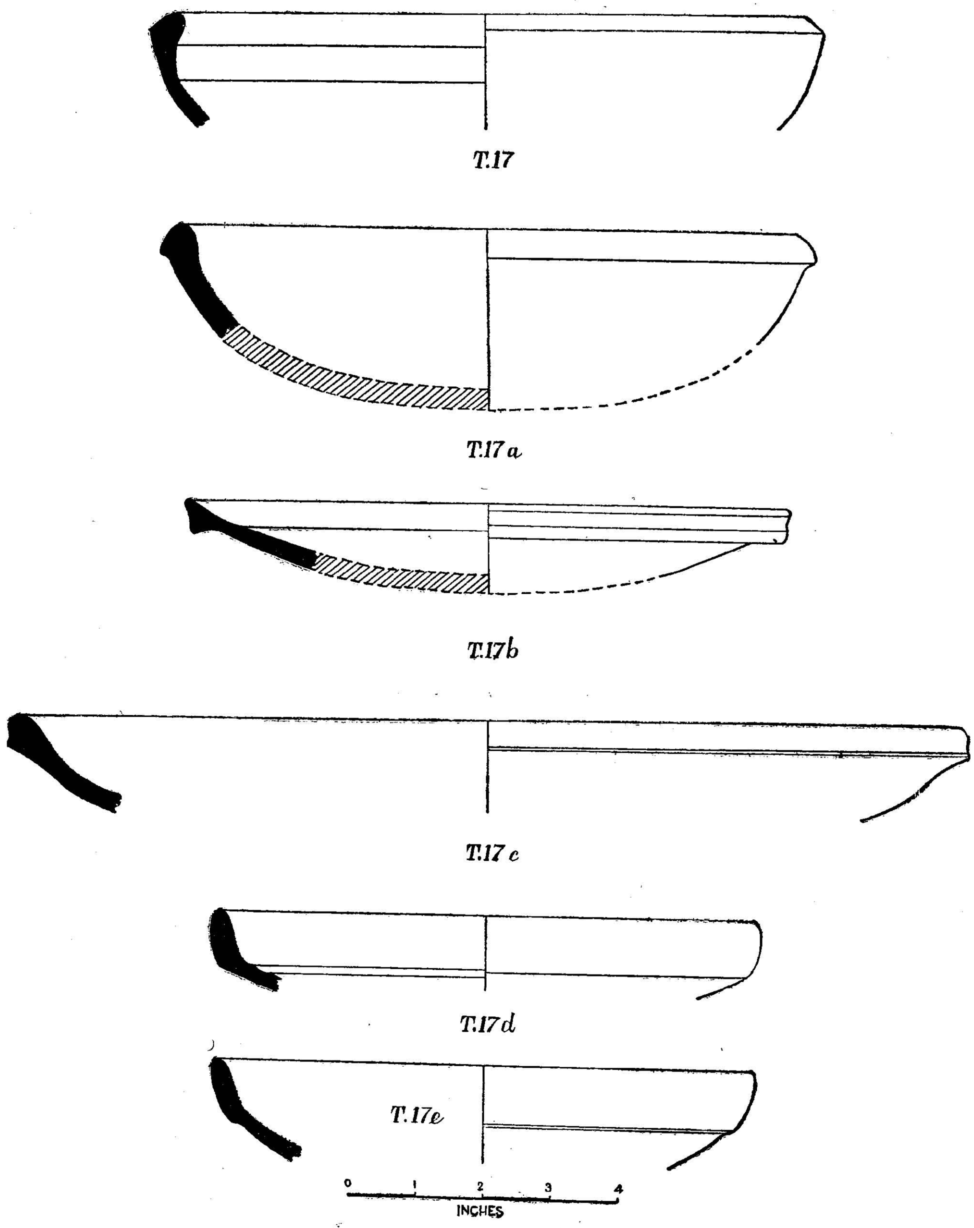


Fig. 17. Type 17. Red ware (Dishes or Lids). Layer 5, Period II (A).
(*See pp. 57-58*)

Fig. 16. (13, 13a-13b; 14, 14a-14c; 15, 15a; 16)

Type 13 Bowls

13. Small rimless bowl, with incurved edge, steeply sloping sides ending in a narrow, projected flat base, having uneven surface. Coarse brown fabric. No. 5238a, MG.N. (5).

13a. Fragment of a similar bowl with angular edge and more regular surfaces. No. 6471, MG.N. E(5). From the well.

13b. Small rimless bowl, with more symmetrical features. Dark brown, coarse surfaces. No. 5238b, MG.N. E (5). From the well.

Type 14

14. Fragment of a vessel, probably bowl with thick flaring sides, and flat base. Broad concentric corrugations inside. Fabric coarse, but covered with thick reddish wash inside and outside. No. 4559, MG.N. C(5).

14a. Fragment of a vessel, similar to T.14, but without internal corrugations. The fabric is very coarse and gritty. No. 6471a, MG.N. G(5).

14b. Fragment of a vessel with a flat base and flaring side. The latter is rounded at the base. Very coarse, gritty fabric. No. 6471, MG.N. G(5).

14c. Fragment of a vessel with flaring side, having shallow inner corrugations, reddish slip, surfaces smoothed. No. 6772, MG.N. G(5).

Type 15 Broad Mouthed vessels—but exact shape indeterminate

15. Fragment of a broad mouthed vessel, with slightly concave flaring rim. Three grooves outside round the neck. Fine fabric with smooth polished red surfaces. No. 4602, MG.N. E(5).

15a. Fragment of a broad mouthed vessel, with straight but slightly inturned rim. Fine fabric with smooth polished red surfaces. No. 4607, MG.N. F(5).

Type 16 Broad Mouthed vessel with Flat Base

16. Medium sized vessel with broad mouth (its top broken), very thick sides and flat base. Raised band round the middle of the body. Very coarse fabric, with uneven red surfaces. The base is definitely handmade. No. 5046, MG.N. E(5). [The vessel resembles a type of flower-pot or the *Kumbha,* water-vessel shaped base (a kind of moulding of pillars) in Indian architecture.] [pl. XIII, 1].

Fig. 17. (17, 17a-17e)

Type 17 Dishes (or Lids)

This type is represented by a number of sherds. And one specimen has been completely reconstructed. This gives us a medium-sized vessel, with low, wide mouth, and tapering base. Such a vessel cannot be called a *Thālī,* the ordinary Indian dish for taking the daily meals. For the latter has a broader and flatter base. (*Cf.* below, polished Black ware, 'Megalithic' type). The former is something like a soup plate ; still it can be a good lid. From an examination of its inner side, there were chances of the type

being used as a dish or plate. It could also have served as a begging bowl for a monk, (though at present it reminds one of the American steel helmets used during the last war).

From the nature of the rim and the curvature of the base, a number of sub-types may be distinguished. And were the sherds not found from one layer, it might have been possible to reconstruct an evolutionary sequence. Even now, one may visualize an evolution in the shape from almost a flat, nearly rimless dish to a vessel with pronounced, rounded, tapering base, having a thick, broad, cut rim.

17. Fragment, dish or lid, with a thickened, slightly inturned edge. Coarse red surfaces. No. 2181, MG.N. A(5).

17a. Fragment, dish or lid, with a similar, but slightly cut edge. Traces of red slip inside and outside. No. 2468, MG.N. E(5).

17b. Fragment, very shallow dish or lid, with a well faceted edge. Coarse red surfaces. No. 2177, MG.N. A(5).

17c. Fragment, broad, shallow dish, with a thickened edge having a groove. Coarse red surfaces. No. 2388, MG.N. D(5).

17d. Fragment, lid or dish, with a broad, thick, slightly inturned rim. Coarse red surfaces. No. 2294, MG.N. D(5).

17e. Fragment, lid or dish, with a broad edge, slightly outturned and undercut. Coarse red surfaces. No. 2184, MG.N. A(5).

Fig. 17a. (17f-17j)

17f. Fragment, dish or lid, rim thickened, which is turned in and sharpened. Traces of red slip. No. 2469, MG.N. E(5).

17g. Fragment, dish or lid. The edge has now a rim-like broad band with a ledge. No. 2451, MG.N. B(5).

17h. Fragment, dish or lid, having a small protrusion at the edge. No. 6521, MG.N. B(5).

17i. Fragment, dish or lid, the edge turned in with a carination. No. 2305, MG.N. D(5).

17j. Fragment, dish or lid, the edge thickened, turned in and having a small groove below the rim. No. 2464, MG.N. E(5).

Fig. 18. (18a-18f)

Type 18

18. Fragment, dish or lid, with almost straight edge, having a thin groove below the rim. No. 2200, MG.N. B(5).

18a. Dish or lid, now reconstructed, with a thick, slightly turned in, sharpened edge, cut below the rim. No. 5732, MG.N. E(5). [pl. XIII, 2].

18b. Fragment, dish or lid, well cut below the rim. No. 2470, MG.N. E(5).

18c. Fragment, dish or lid, thin rim band with sharp edge, and grooves below the rim. No. 2456, MG.N. E(5).

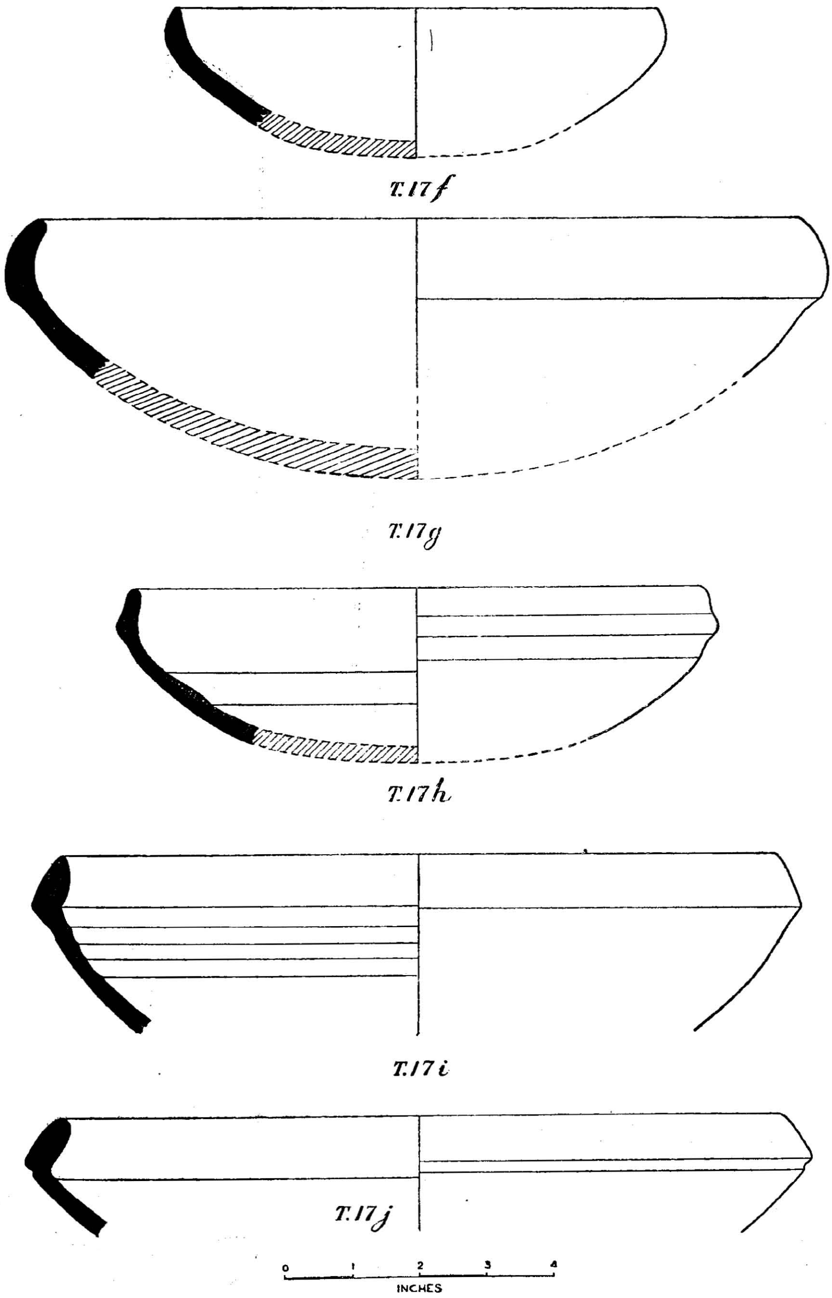


Fig. 17a. Type 17. Red ware (Dishes or Lids). Layer 5, Period II (A).
(*See p. 58*)

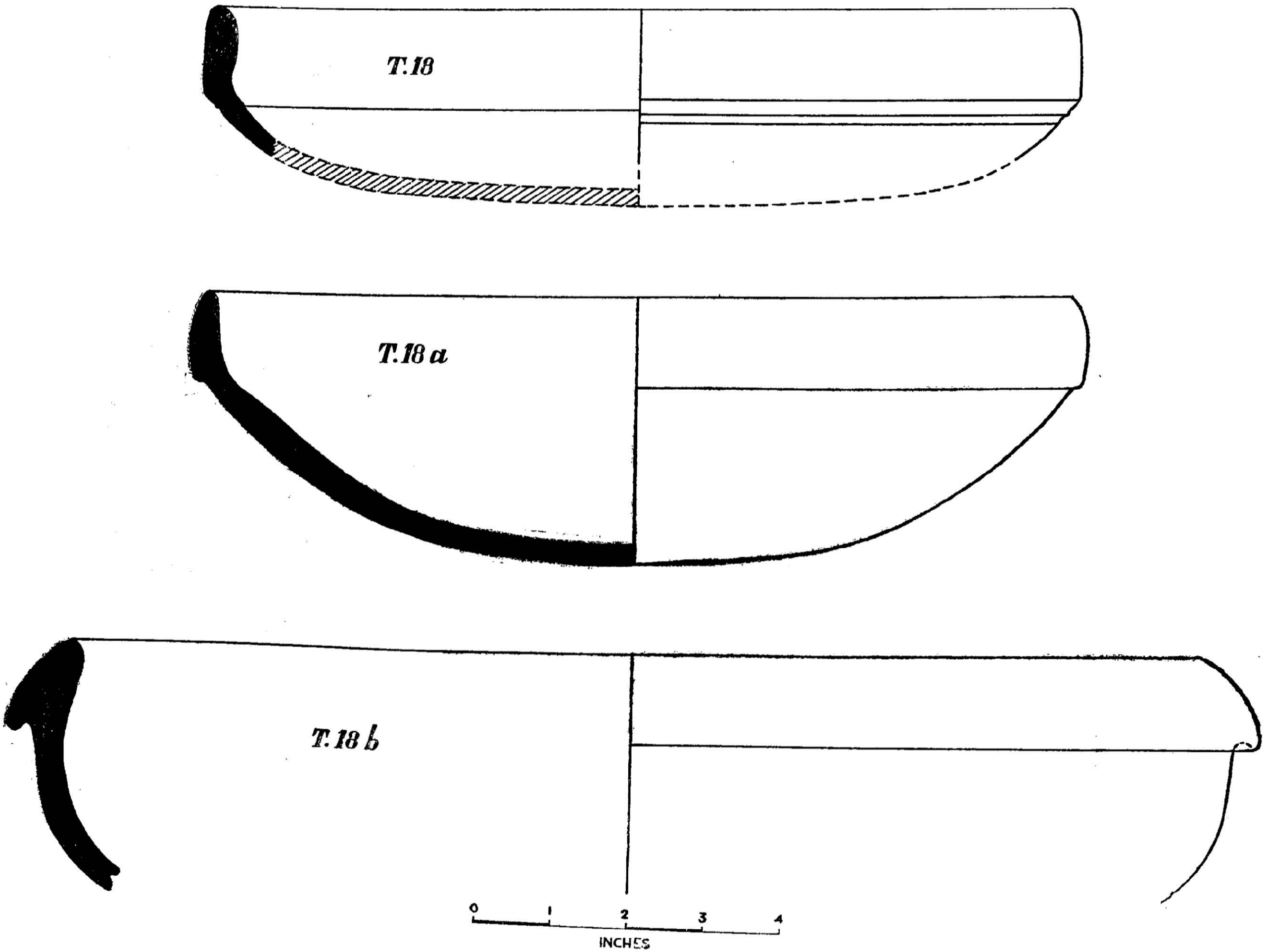


Fig. 18. Type 18. Red ware (Dishes or Lids). Layer 5, Period II (A).

(See p. 58)

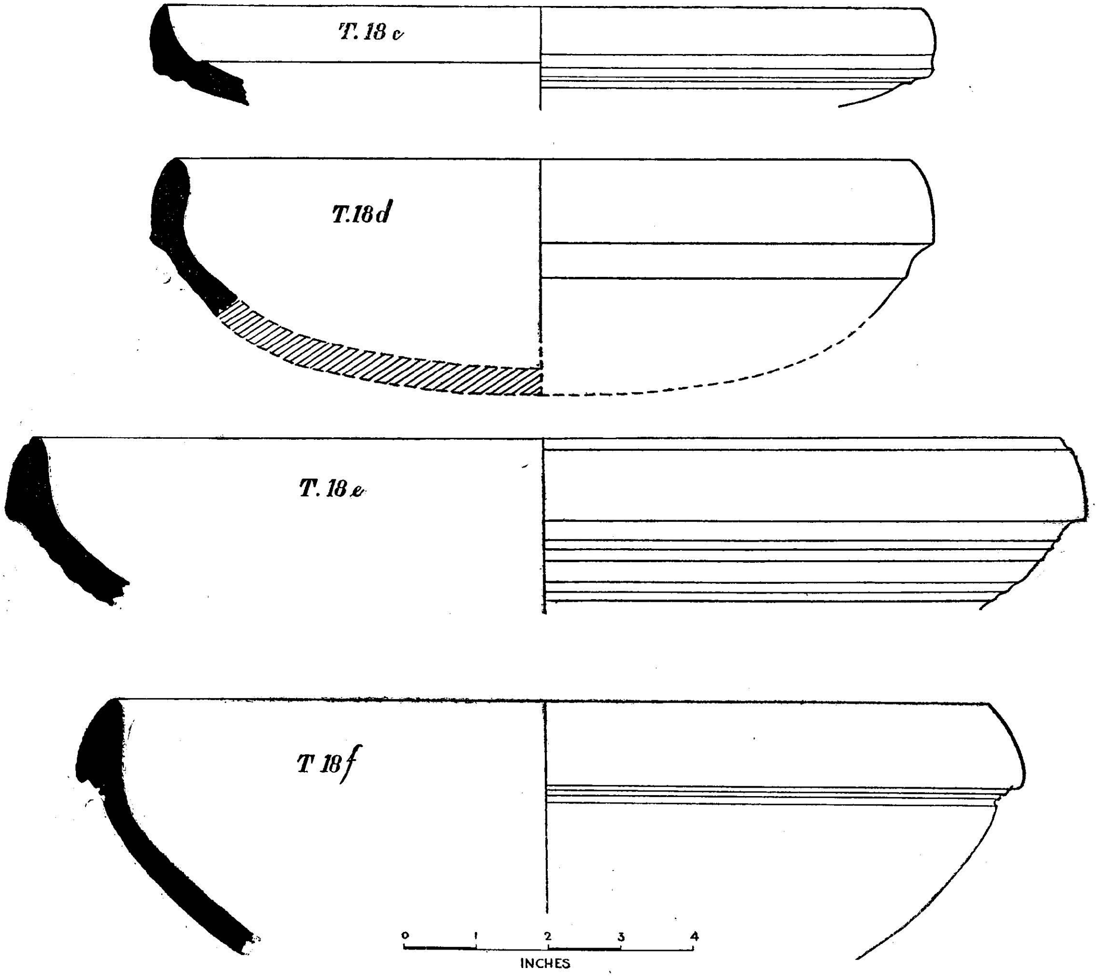


Fig. 18a. Type 18. Red ware (Dishes or Lids). Layer 5, Period II (A).

(*See pp. 58-59*)

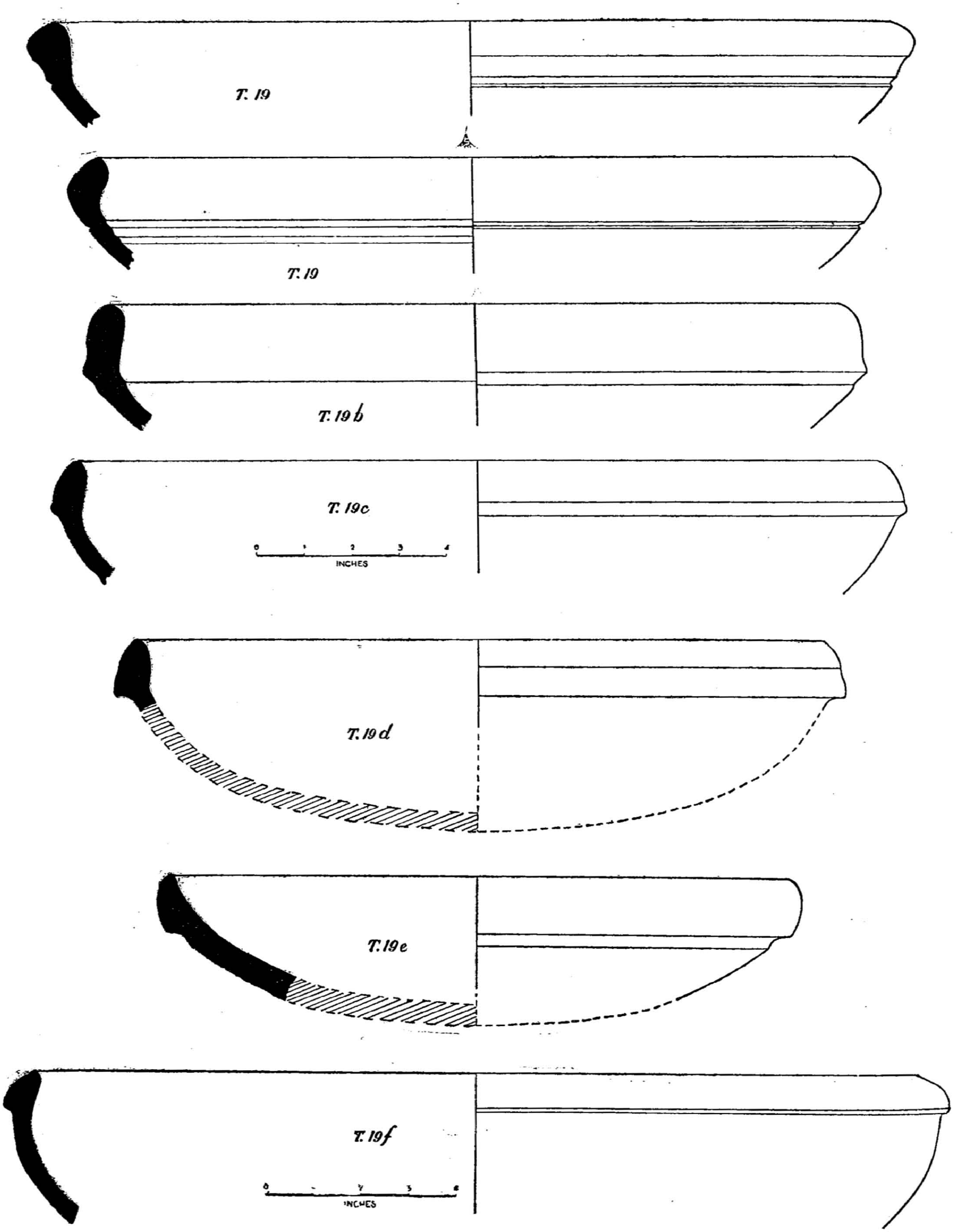
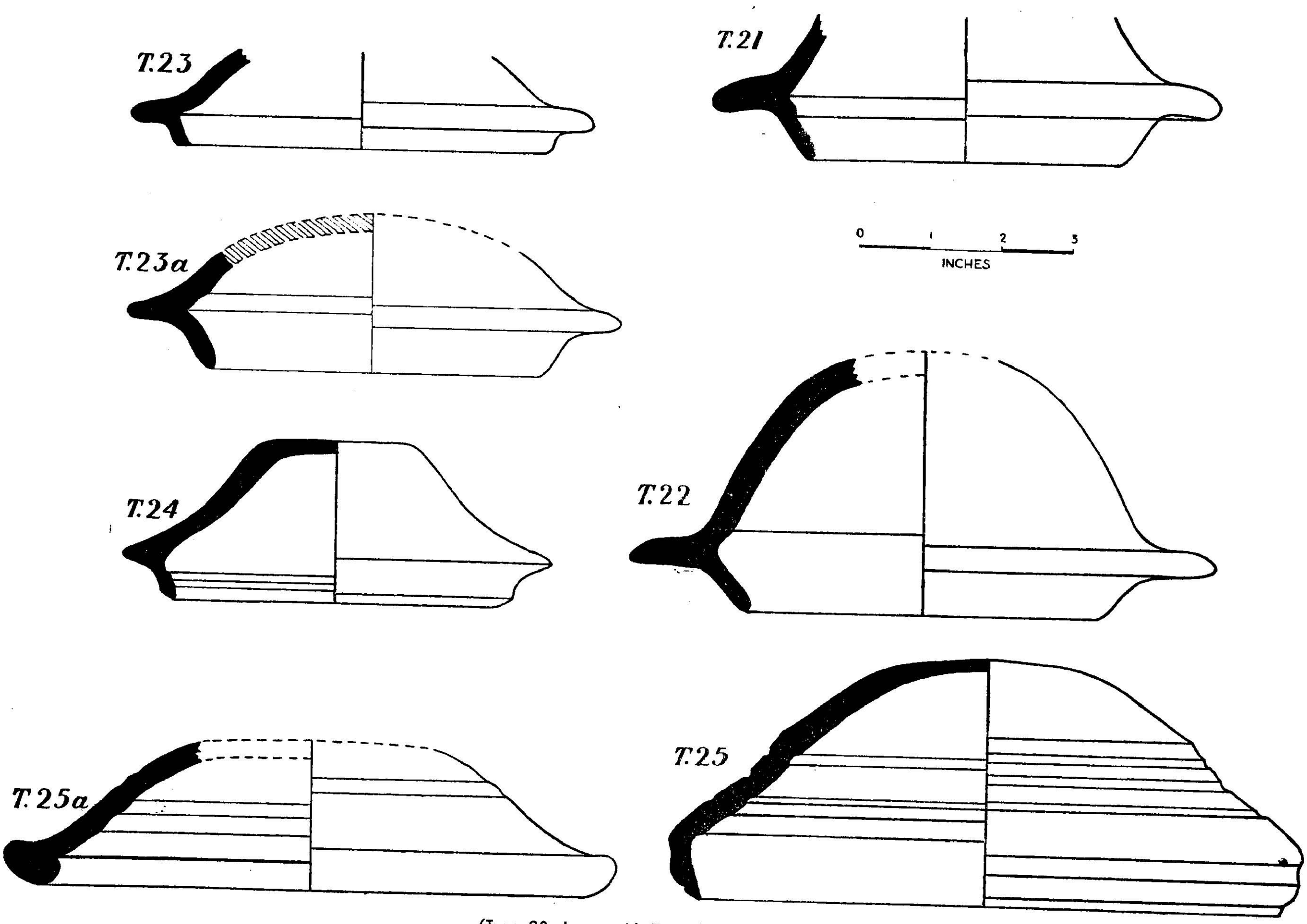


Fig. 19. Type 19. Red ware (Dishes or Lids). Layer 5, Period II (A)

(*See p. 59*)



(Type 20 shown with Type 37. See Fig. 26),

Fig. 20. Types 21–25. Red ware (Lids). Layer 5, Period II (A).

(*See pp. 59-60*)

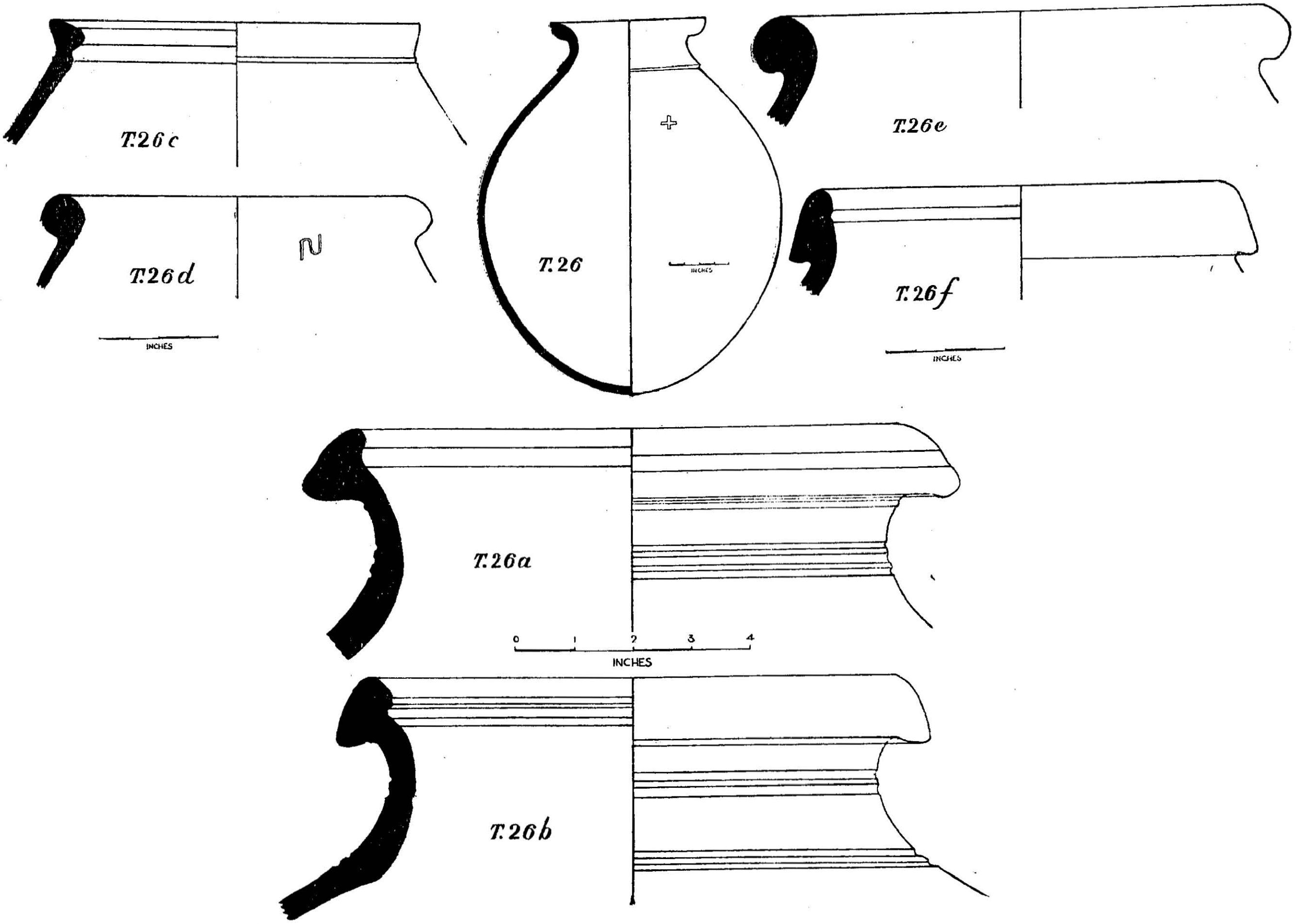


Fig. 21. Type 26. Red ware (Storage Jars). Layer 5, Period II (A).

(*See p. 60*)

18d. Fragment, dish or lid, with thick rim band, and a broad shallow groove below the rim. No. 2212, MG.N. B(5).

18e. Fragment, dish or lid, with a series of shallow grooves and bands below the thick rim, sharpened at the edge. No. 2485, MG.N. E(5).

18f. Fragment, dish or lid, with a well cut rim and grooves below the edge. No. 6585, MG.N. E(5).

Fig. 19. (19, 19a-19f)

Type 19

19. Fragment of a very large lid or dish, slightly incurved rim, thickened at edge and a broad groove outside at the junction of the rim and curvature of the base. Thick, coarse, brown fabric with red wash. No. 2342, MG.N. D(5).

19a. Similar to the preceding, but the rim band bulging in the middle, and thinner at the top, groove narrower as before. No. 2303, MG.N. D(5).

19b. Fragment, dish or lid, with slightly incurved rim band of uniform thickness, and prominent angularity at the junction of the rim and curvature of the base. No.2347, MG.N. D(5).

19c. Fragment, similar to the preceding, but the rim band slightly thickened at the junction, and projecting. No. 2481, MG.N. E(5).

19d. Similar to the preceding, but the band markedly projected, making it a " cut rim " because of increased thickness. No. 224, MG.N. B(5).

19e. Similar to the preceding but the rim has a concave cut. No. 2206, MG.N. B(5).

19f. Similar to No. 2481, but larger and narrower band. No. 2352, MG.N. D(5).

Type 20 Dish (Illustrated with Type 37, Fig. 26)

This type is distinguished from the previous ones by the thinness of its fabric, as well as by its form, which is definitely that of a dish. Very few—only two—sherds of this type have been found.

20. Fragment of a dish, with a high slightly inturned side. Fine, thin fabric with well levigated clay, covered with a thin red slip and burnished smooth. No. 2322, MG.N. (5).

Fig. 20. (21-25a)

Types 21-25 Lids

21. Half of a large lid, probably with a moderately high roof, coarse brown fabric. No. 6506, MG.N. E(5). From the well. *Three smaller ones Nos. 6746, 6739, 6750 of similar type 21a—21c not illustrated.*

22. Fragment of a large lid, high roof, very coarse greyish brown fabric. No. 6506a, MG.N. E(5).

23. Fragment of a lid having probably very high roof, with almost straight sides, and small inner ring, fabric coarse, but smoothed by burnishing. No. 2611, MG.N. C(5).

Two more fragments, Nos. 4630, 6736 of similar types 23a-23b not illustrated.

23. Fragment, lid, with a low (?) roof and a low inner ring. No. 6744, MG.N. (5).

23a. Fragment, lid with the inner ring slightly larger than in the preceding one. No. 6737, MG.N. A(5).

24. Lid, with a low, flat, domical roof, the edge of the inner ring is sharp and has a well made groove so that it is certain that the ring went into the rim of the vessel, if covered. No. 6461, MG.N. F(5). From the well.

25. Lid with a fairly high domical roof, having a series of grooves on the outside as well as inside. It has no inner ring. No. 6513, M.G.N. E(5). From the well.

25a. Fragment of a lid, similar to T.25, but it has an internally beaded rim. No. 6741, MG.N. C(5).

Fig. 21. (26, 26a-26f)

Type 26 Large Vessels (Storage Jars)

Remains of a number of large vessels were found *in situ* in this layer. One has been partially reconstructed, while there are others of which only rim fragments survive. From these it is not possible to have a full idea of the shapes. Exceptionally thick and heavy rims suggest how large and spacious the vessels must have been.

26. Large storage jar, with a rounded base, short neck and out turned rim. Thick, coarse, burnished red fabric with a black spot at the base. The rounded base indicates that the vessel must have been kept in a hollow, permanent, fixed stand. Incised cross on the shoulder. No. 4330a, MG.N. (5). Drawn 1/4 the original. [pl. XIII, 4].

26a. Fragment, rim with neck having three shallow grooves. Red slip over rim and neck outside, and only on the inside of the rim. Very coarse fabric, with lime nodules. No. 4363, MG.N. B(5).

26b. Fragment, rim with neck. Grooves round the neck and shoulder. Dull brown, coarse fabric, with lime encrustation on the neck. No. 4330, MG.N. B(5).

26c. Fragment of rim. The vessel has no neck but has a flat topped edge. Very gritty, coarse, red fabric. No. 4351, MG.N. B(5).

26d. Fragment of rim, externally beaded. Very coarse, burnished, red fabric. No. 4351a, MG.N E(5).

The one illustrated from Layer 4 like No. 694, has a Brāhmi '*lu*'-like incised letter on its shoulder. It may represent the Brahmi numeral '8'. A sherd No. 5067 of similar type with identical symbol or letter occurs in MG.E.N. Ie(3). However, if read vertically, according to the natural shape of the vessel, it looks like ' S'.

26e. Fragment of a rim, with very thick external beading. Coarse fabric, but having a fine red wash. No. 4351, MG.N. E(5).

26f. Fragment of a rim, with a very broad, undercut rim. Coarse fabric but possibly having a red wash. No. 4287, MG. N. B(5).

Black-and-Red Ware

The Black-and-Red ware is, as said above, comparatively smaller in quantity. As regards quality, all the types are not uniformly of the same fabric, either in thickness of the ware, or polish or colour. Three kinds may be distinguished—(*a*) Ordinary, (*b*) Fine, (*c*) Very fine. These gradations in quality are not confined to one type, but are generally to be found in all the types of this ware.

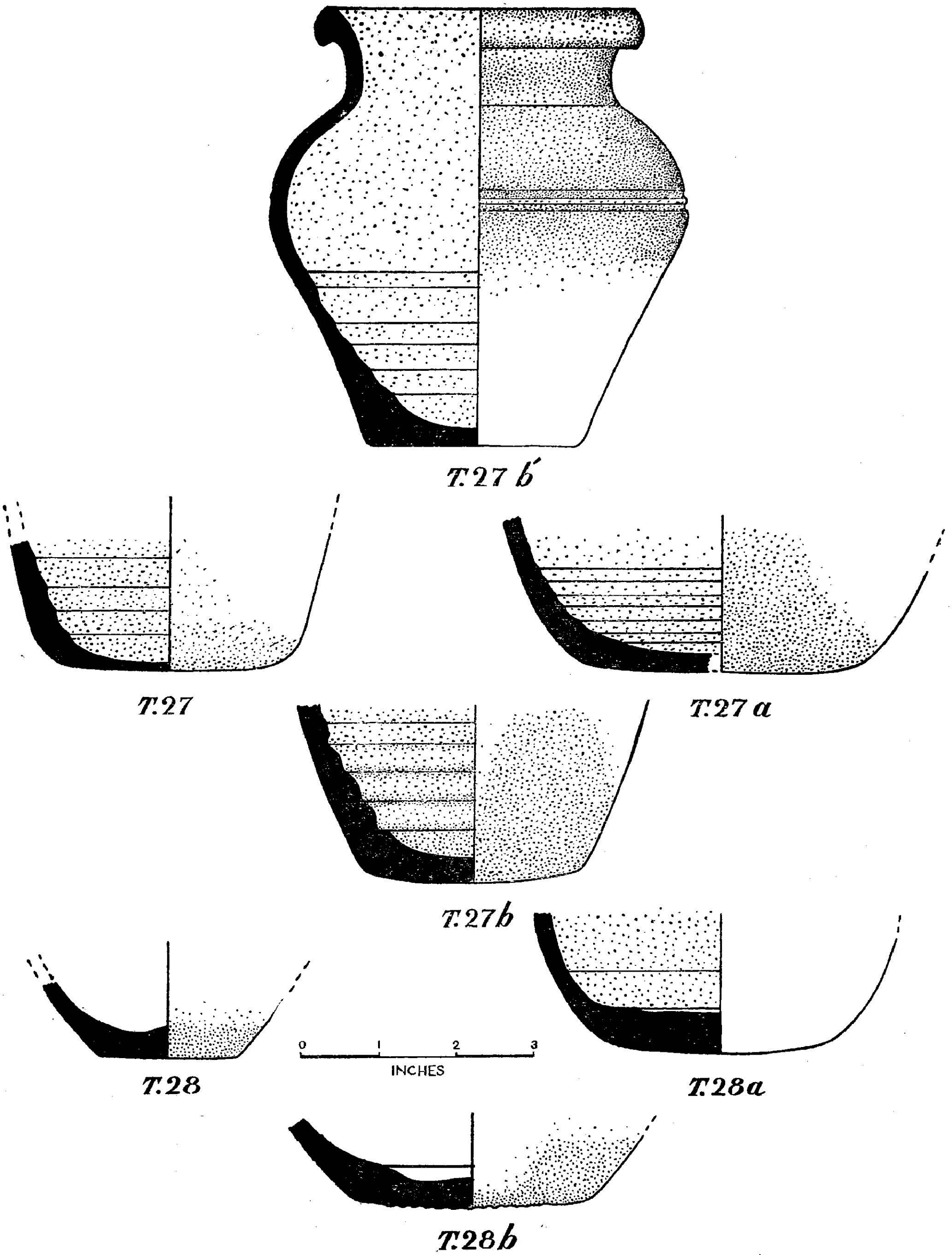


Fig. 22. Type 27–28. Black-and-Red Ware. Layer 5, Period II (A).

(*See p. 61*)

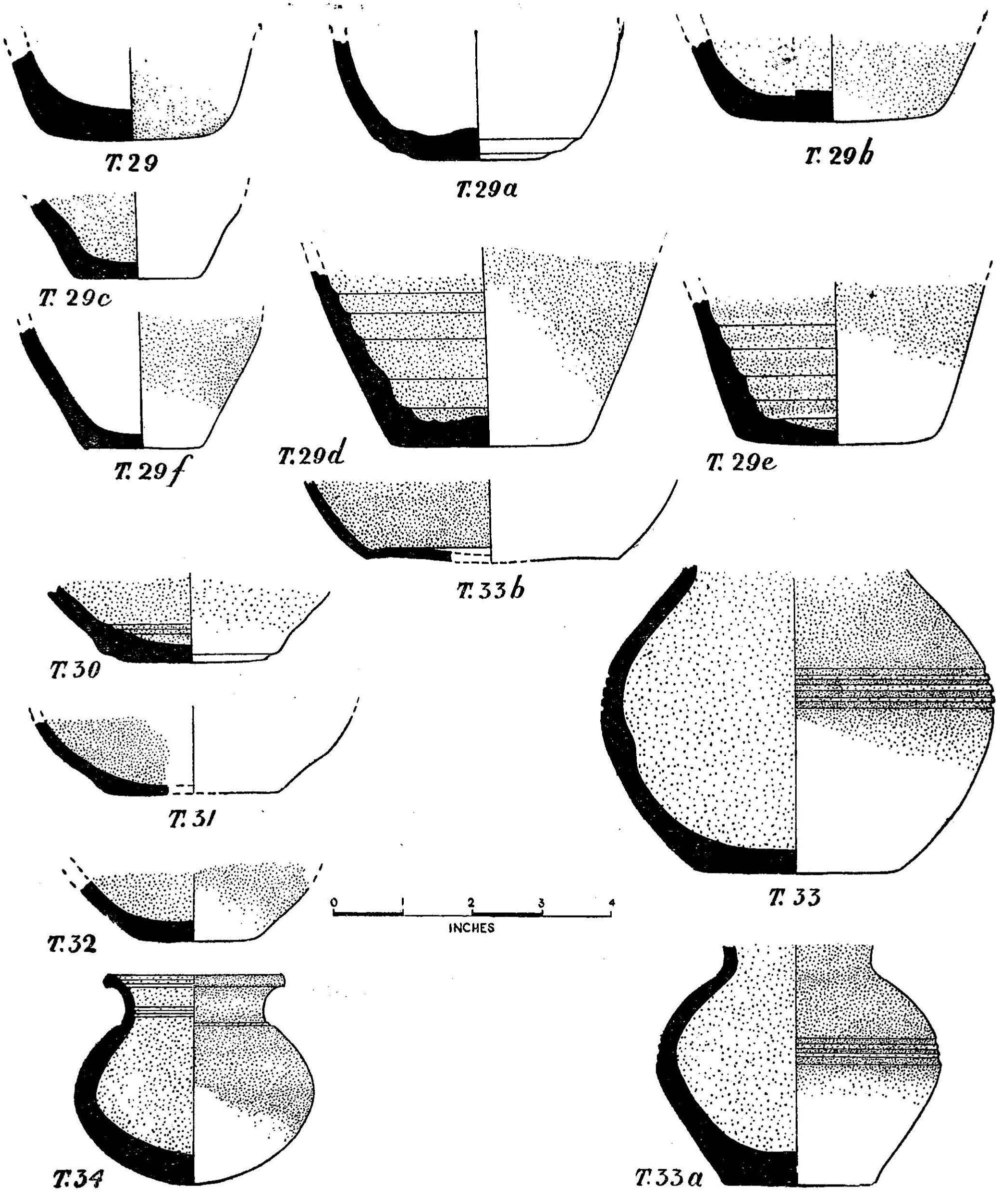


Fig. 23. Types 29–34. Black-and-Red Ware. Layer 5, Period II (A).

(*See pp. 61-62*)

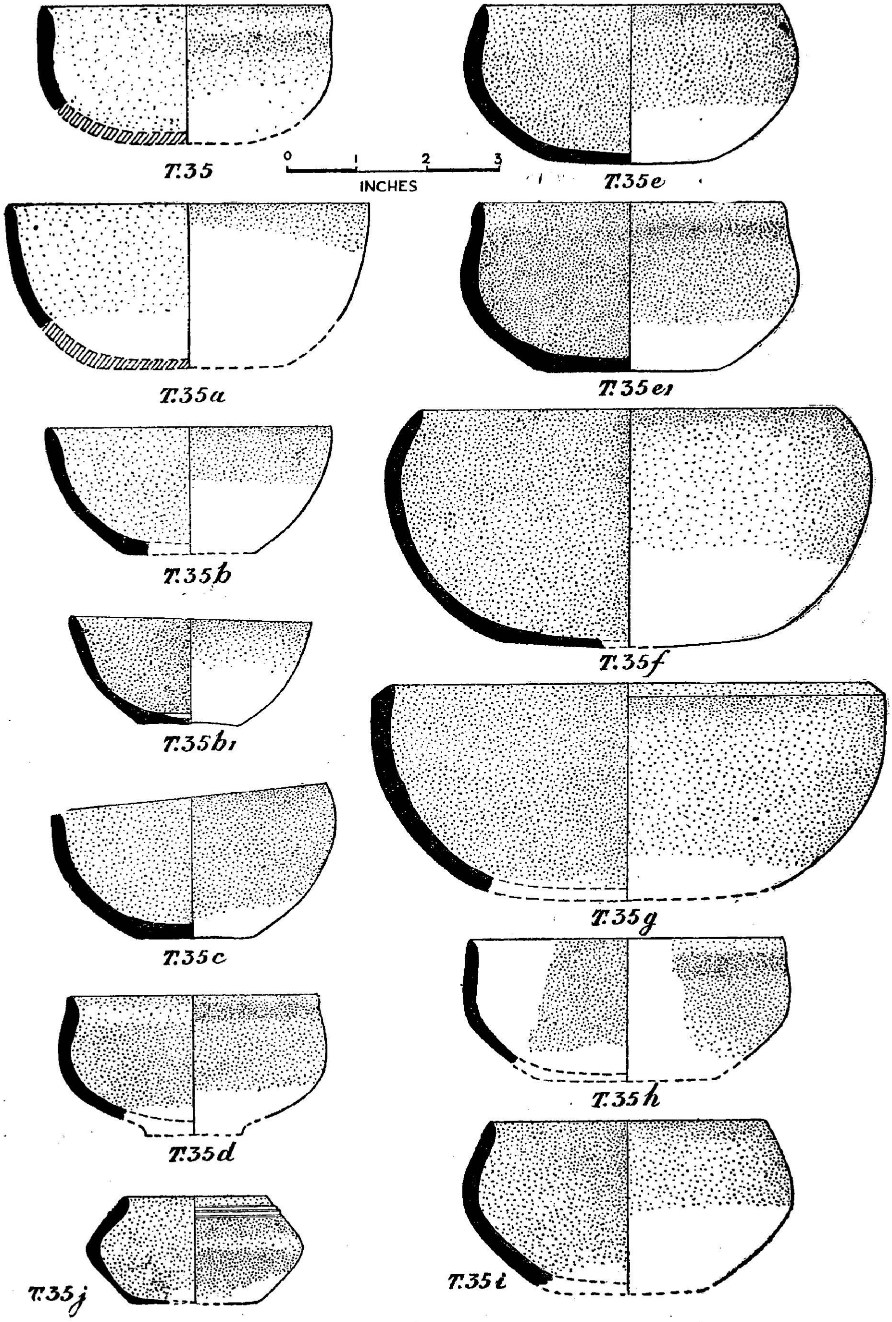


Fig. 24. Type 35. Black-and-Red Ware (Bowls). Layer 5, Period II (A).

(*See pp. 62-63*)

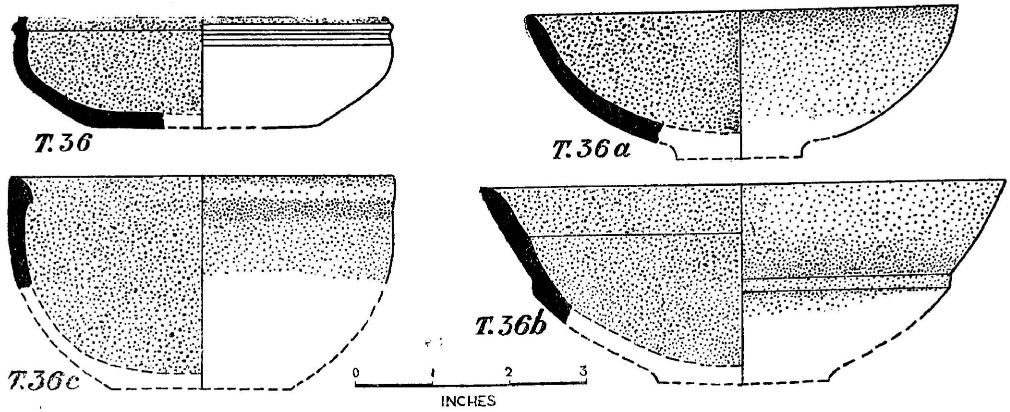


Fig. 25. Type 36. Black-and-Red Ware (Bowls). Layer 5, Period II (A).

(*See p. 63*)

The Black-and-Red ware exhibits the process of inverted firing, so that the tops are black or blackish, while the bases are brownish or red. These colour-effects are further heightened by the application of some kind of slip before firing, and polishing or burnishing later. The ware is closely analogous to the Megalithic ware, and either it is derived from the latter, or the latter from it, or both from a third source.

From this layer, only sherds were found, but from layer 4 an almost complete vessel (No. 5202), which is very nearly identical with this type, was recovered. This represents a small storage jar (*Baraṇī*) or a drinking vessel, (*Tāmbyā* or *Loṭā*). [pl. XV, 10].

Fig. 22. (27, 27a-27b; 28, 28a-28b).

Type 27

27. Fragment, base and side, smooth brownish red outside, with traces of thin red slip, black inside, with well marked corrugations, base flat, rounded at corners. No. 4558, MG.N. E(5).

27a. Almost similar to 4558, but with narrower corrugations. No. 4571, MG.N. E(5).

27b. Complete lower half of a similar vessel, but dull red inside. No. 5446, MG.N. E(5). From the well.

Type 28

These vessels differ from Type 27 in having thick base and thinner side.

28. Fragment, base and side. Very narrow angular base. No. 4565, MG.N. F(5).

28a. Fragment, base and side, brownish outside, blackish inside, broad base rounded at corners. No. 4537, MG.N. E(5).

28b. Fragment, base and side, base rounded and having impression of basket decoration on a black surface, inside smooth red, owing to thin red wash. No. 4540, MG.N. D(5).

Fig. 23. (29, 29a-29f; 30-32, 33, 33a-33b ; 34).

Type 29

In this type, the base and sides are of equal thickness.

29. Fragment, base and side, both very thick, base rounded and blackish. No. 4543, MG.N. B(5).

29a. Fragment, base and side, light brown inside, reddish outside, very shallow corrugations, base flat but rounded at corners. No. 4534, MG.N. E(5).

29b. Fragment, base and side, black inside and outside, base as before. No. 4557, MG.N. F(5).

29c. Fragment, base and side, black inside and red outside, side and base of equal thickness, but light and thin. No. 4587, MG.N. D(5).

29d. Fragment, base and side, very shallow corrugation inside, no slip, but smoothed outside and inside which is blackish, base flat with angular corners. No. 4564, MG.N. E(5).

29e. Similar to 4564, but corrugations more marked. No. 4553, MG.N. D(5).

29f. Similar to 4564, but thinner side and base. No. 4568, MG.N. D(5).

Type 30 Globular vessel with Thick Base and Thinner Side

30. Fragment base and side, base thick and having a ring-like projection but with an uneven surface. No. 4535, MG.N. C(5).

Type 31

31. Fragment, base and side of a globular vessel with narrow projecting base. Thin fine fabric, brown outside, black inside No. 4552, MG.N. E(5).

Type 32

32. Fragment, base and side of a globular vessel, flat, narrow base. Fine fabric though thick, black inside, with a coating of black slip, bright red outside. No. 4573, MG.N. E(5). *Three other fragments (Nos. 4582, 4575, 4581* all from MG.N. C, A, D, (5) respectively,) *are not illustrated.*

Type 33

33. Globular vessel, probably with a short neck and everted rim. It has a flat base and three shallow grooves round the belly below which the surface is reddish. No. 353, MG.N. B(5). [pl. XV, 12].

33a. Globular vessel, similar to 353, but much smaller with body tapering towards the base. Three grooves round the belly, and traces of short neck with perhaps everted rim. No. 353a. MG.N. F(5). [pl.XV, 11].

33b. Fragment, base and side. Glossy black inside and outside, fine smooth red, both a result of the application of some slip. No. 892, MG.N. D(5). Depth 15 ft. 2 in.

Type 34

34. Globular vessel, but smaller than 353a, with a fine glossy black and red surface. Base rounded. Narrow neck with a groove and a thin, beaded, everted rim. No. 5208, MG.N. B(5). [pl. XV, 13].

Fig. 24. (35, 35a-35j and pl. XV, 8-9).

Type 35 Bowls

Though not many sherds of these vessels were found, a few were recovered almost complete while the few others seem to give a representative series.

35. Fragment of a rimless bowl with straight side and slightly rounded at the base. Upper half of the outside and the whole of the inside black, burnished over a black coating, light brown base, No. 5221a, MG.N. (5).

35a. Fragment of a similar vessel, side very slightly outturned but the fabric finer and thinner, with glossy surfaces, outside red almost upto the top. No. 5221, MG.N. (5).

35b. Fragment, bowl, with a narrow flat base, and slightly outgoing side. Fabric similar to No. 5221. No. 6352, MG.N. F(5).

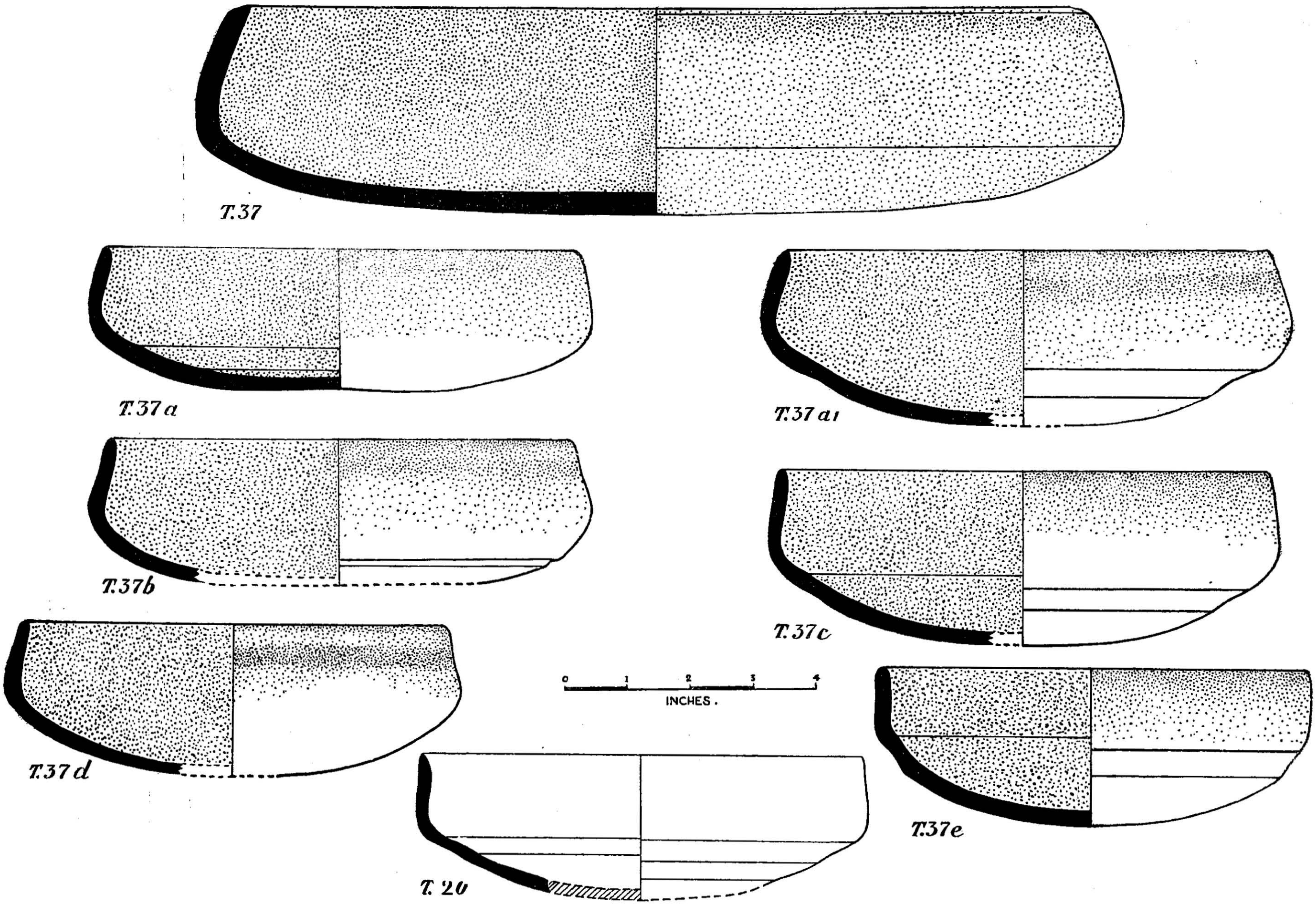


Fig 26. Types 20 and 37 Black-and-Red Ware (Dishes). Layer 5, Period II(A).

(*See pp. 63-64*)

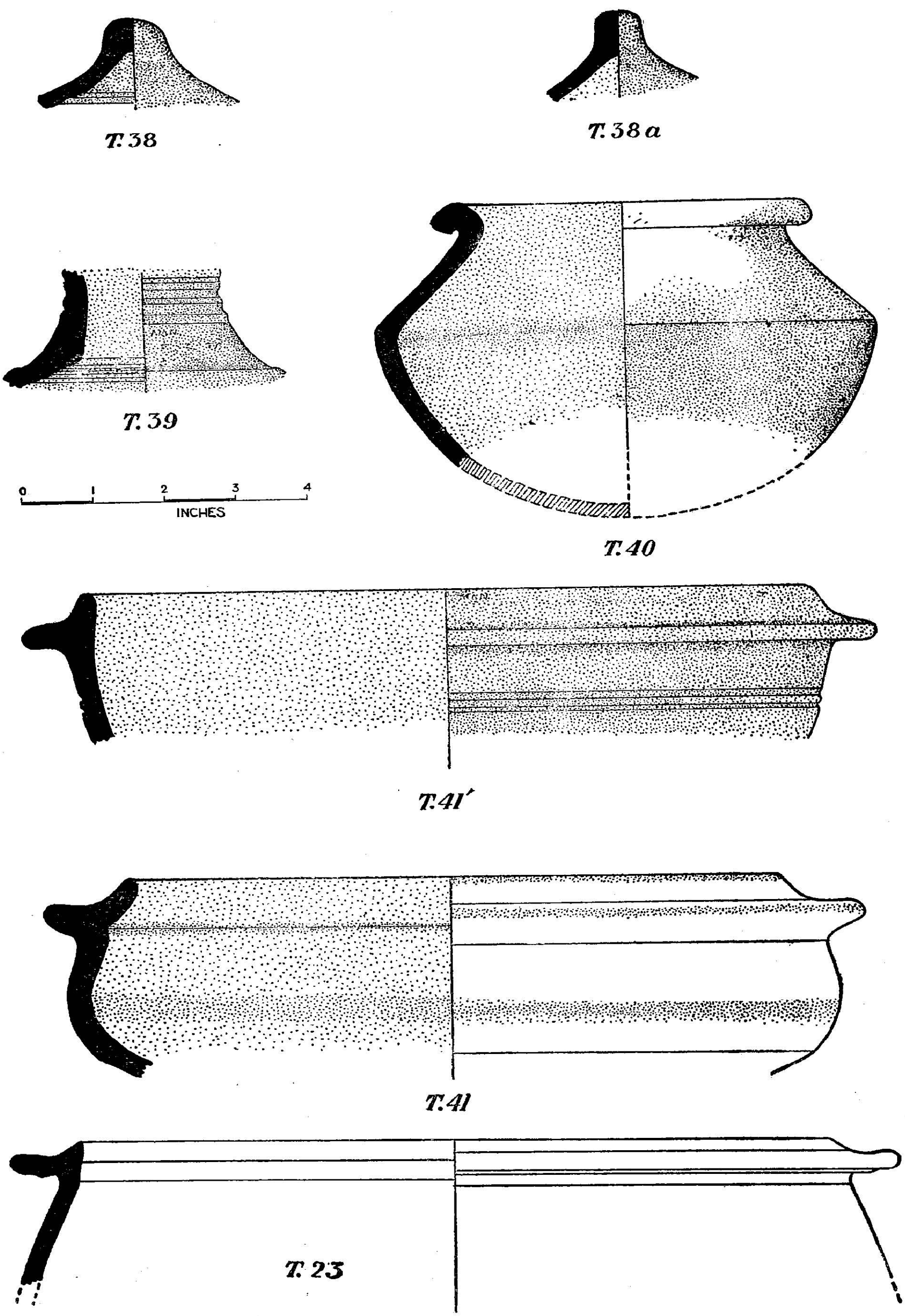


Fig. 27. Types 23, 38–41. Black, Black-and-Red and Red ware Layer 5, Period II (A).

(See p. 64)

35b[1]. Fragment, bowl, base gone. The lower part on the outside is whitish brown, and not reddish as in the preceding. No. 6292, MG.N. E(5). [cf. pl. XV, 9].

35c. Bowl (reconstructed), with slightly inturned sides and flat base. Rather coarse fabric, with rough brownish base. No. 5216, MG.N. (5). [pl. XV, 6].

35d. Fragment, bowl, similar to No. 5216, but probably with a projecting base. No.6340, MG. N. D(5).

35e. Bowl, reconstructed, with incurved sided and slightly bulging body. No. 5215, MG.N. (5). From the well. [pl. XV, 6].

35e[1]. Almost identical with 35e. Reconstructed. No. 5207, MG.N. (5). [pl. XV, 5].

35f. Almost half of a large bowl having bulging body and side turning in, just at the top. Very fine fabric, thin, light, with glossy black surface inside, outside smooth red, below the belly. No. 5217, MG.N. E(5). From the well.

35g. Fragments (two), almost half a large bowl, similar to 5217 but with a cut or faceted edge. Thick but fine fabric, perhaps black inside and outside. No. 6302, MG.N. A(5). Cf. Similar shape in N.B.P., Fig. 6b.

35h. Fragment, bowl, with sides slightly angular near the base. The vessel is half black and half red *vertically* and not horizontally. No. 5222, MG.N. D(5).

35i. Fragment, bowl but with incurved side and thicker at the base. Fine fabric, with polished surfaces. No. 5219, MG.N. (5). [pl. XV, 8].

35j. Fragment, very small bowl, similar to 5219 in shape but having grooves round the edge of the mouth and very thin base. No. 6388, MG.N. A(5).

Fig. 25. (36, 36a-36c).

Type 36

36. Bowl, which, unlike the preceding, had a rim, traces of which remain, and a very broad, flat base, with a low body. Fine fabric, black inside and red outside, excepting at the rim. No. 6339, MG.N. F(5).

36a. Bowl, rimless, but with a broad low body and perhaps having a projecting base. Comparatively coarser fabric, without polish, only slightly brown at the base. No. 6328, MG.N. E(5).

36b. Bowl, rimless, but with flaring sides and a ledge half way down the body, and perhaps it had a projecting base. Fine fabric, reddish below the ledge. No. 5224, MG.N. (5).

36c. Fragment, bowl, with *internally beaded* rim. No. 6411, MG.N. E(5).

Fig. 26. (37, 37a-37e and pl. XIV 1-4).

Type 37 Dishes

Comparatively a large number of sherds was found which gives an idea of the types or sizes of dishes in this ware.

37. Very large dish (now fully reconstructed), having 13 inches diameter, and 40.5 inches circumference), [pl. XV, 1]. It has incurved thick sides, with a cut edge. Fine polished black surfaces, except at the base on the outside which is crimson. This as well as the fine black are due to the application of a black slip. While taking the moulds for reconstruction, it was found that it was irregular in shape as well in make, and was perhaps partly hand-made. No. 5215a, MG.N. B(5).

37a. Smaller dish, similar to above, but the edge uncut and not so fine, particularly the base which is brownish and perhaps merely burnished. No. 5210, MG.N. E(5). [cf. pl. XV, 2, 4].

37b. Dish having a slight angular bent with sides sharply turning in with a groove on the base. No. 6589, MG.N.

37c. Dish, almost similar to T.37a, but of coarser make, with burnished brown and black patches inside, and coarse brownish base. This suggests how vessels would look like if not coated with a black slip. No. 5211, MG.N. A(5).

37d. Dish, similar to 5210, but with thinner edge. The fabric is also thinner and with fine finish. Black inside and bright at the base, part of which is glossy owing to the application of a slip or polish. No. 350, MG.N. A(5).

37e. Dish, similar to 5210, but perhaps finest of all. It has a thin fabric and a very thin sharpened edge. Glossy black inside and top of the side outside, while the rest is smooth crimson-red. The cracks in the surface show that this is due to the application of a thick red coating and subsequent firing. No. 5212, MG.N. C(5).

Fig. 27. (38, 38a; 39, 40, 41', 41).

Type 38 Lids (See also similar types in Tan ware. Fig. 28)

Only two fragments of lids in this ware have been found. From these, the full shape cannot be reconstructed, unless we have recourse to similar ware found elsewhere.

38. Fragment, lid, with a rounded, conical, nipple-like knob. Polished black surface, coarse, unburnished inside. No. 5089, MG.N. E(5).

38a. Fragment, lid, with a rounded, conical knob. Polished black surface, coarse, burnished inside. No. 792, MG.N. E(5).

Type 39 High and Narrow Necked vessel

Only one fragment of this type of vessel has been found.

39. Fragment, high narrow neck of a vessel, with grooves. Finely polished surface, coarse, black inside. No. 5230, MG.N. E(5).

Ordinary Black Ware

Very few sherds of this ware have been found. The fabric is generally coarse, often not uniformly black, but having patches of red, and partly burnished.

Type 40 Short Necked, Carinated Body

40. The type is nearly similar to T.9, Fig. 14 in Red Ware. It has short everted rim, carinated body. The surface above the carinated body is glossy. No. 5231a, MG.N. D(5).

Type 41 Cooking Vessels (Marathi—Haṇḍī)

This type of vessel looks like a lid, (Types 21-25, Fig. 21) to which it resembles in a number of details. But it appears that the vessel was shallow,

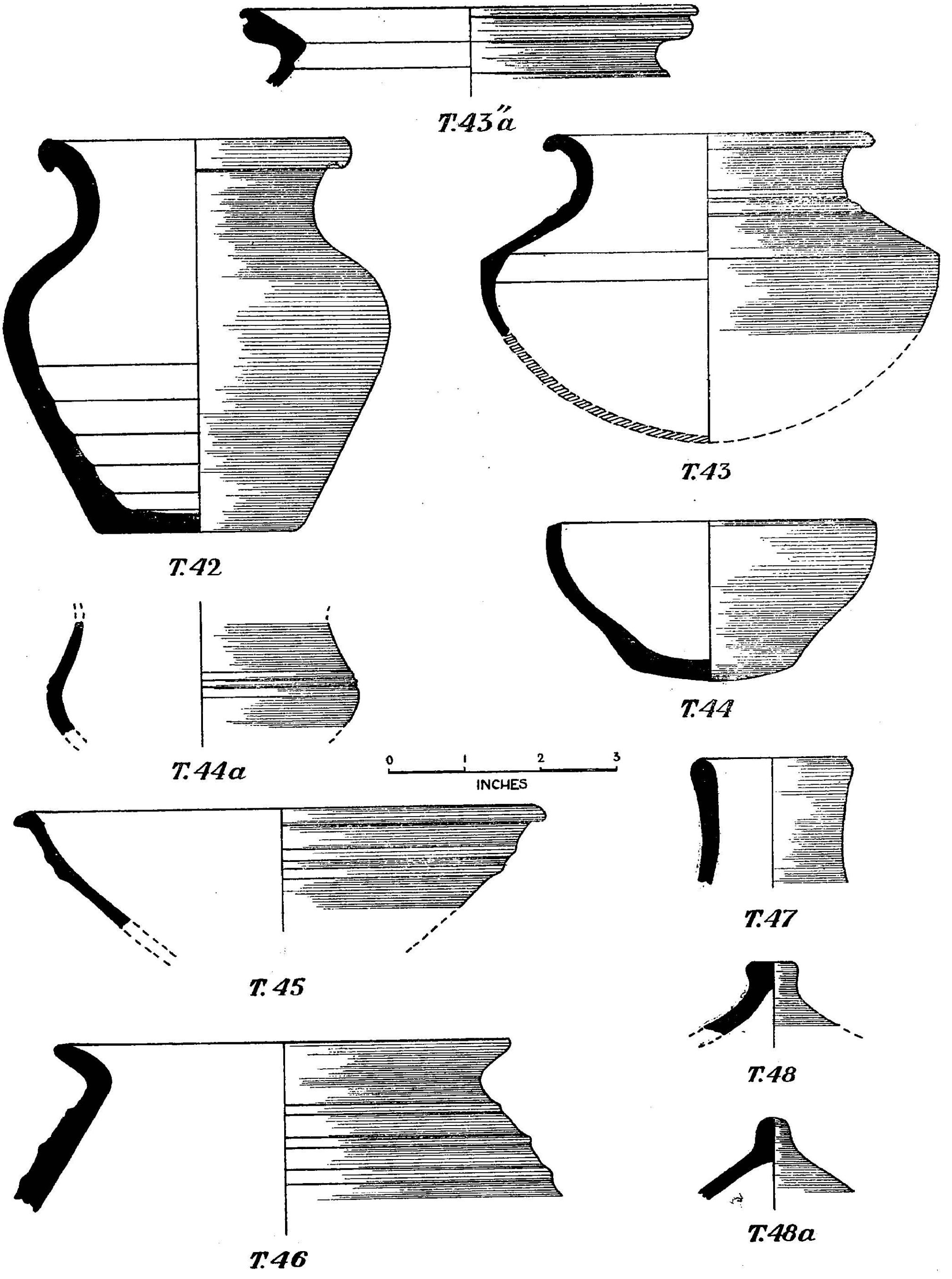


Fig. 28. Types 42–48. Tan ware. Layer 5 and 4, Period II.

(See pp. 65-66)

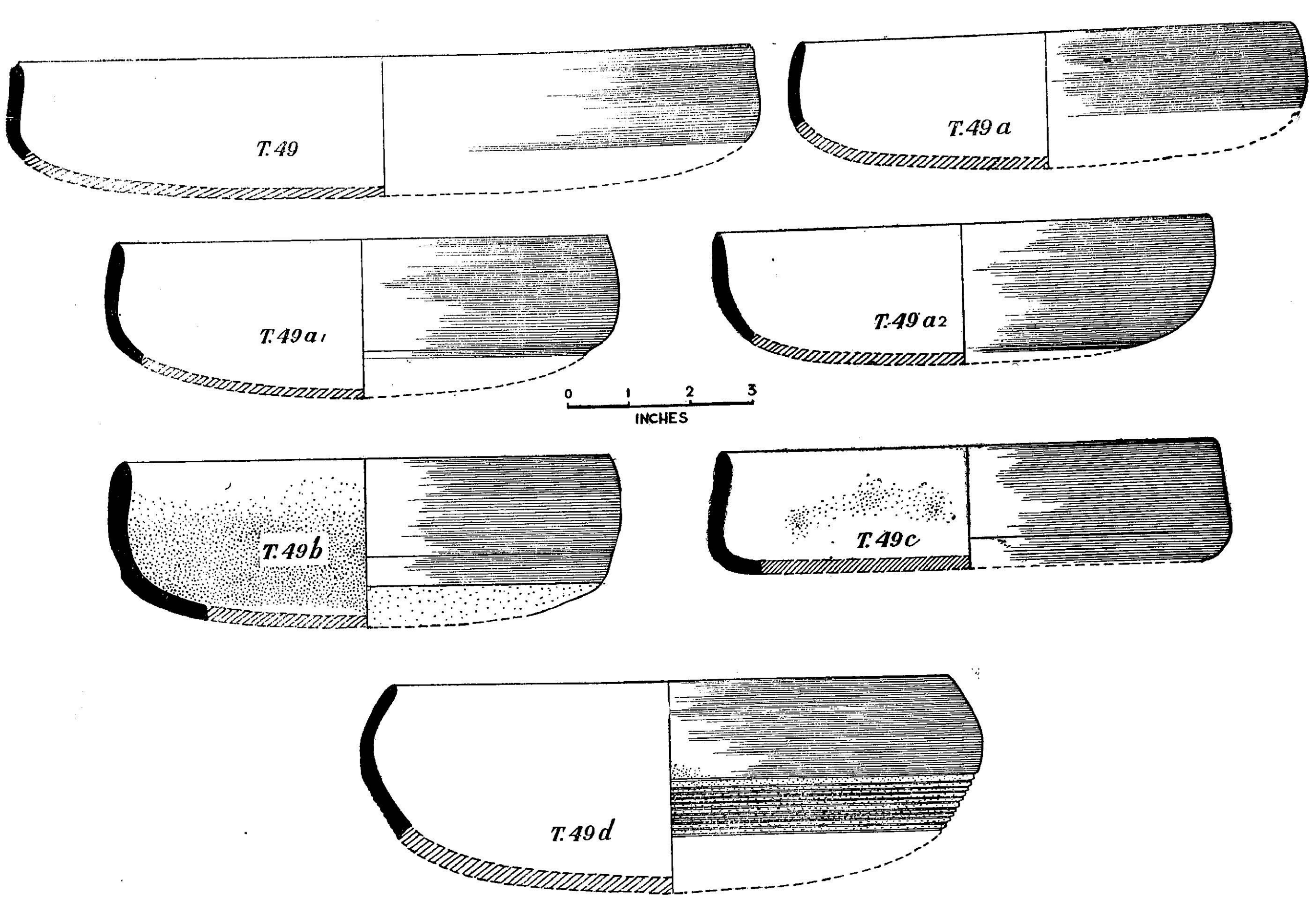


Fig. 29. Type 49. Tan ware. (Dishes). Layer 5, Period II.

(*See p. 66*)

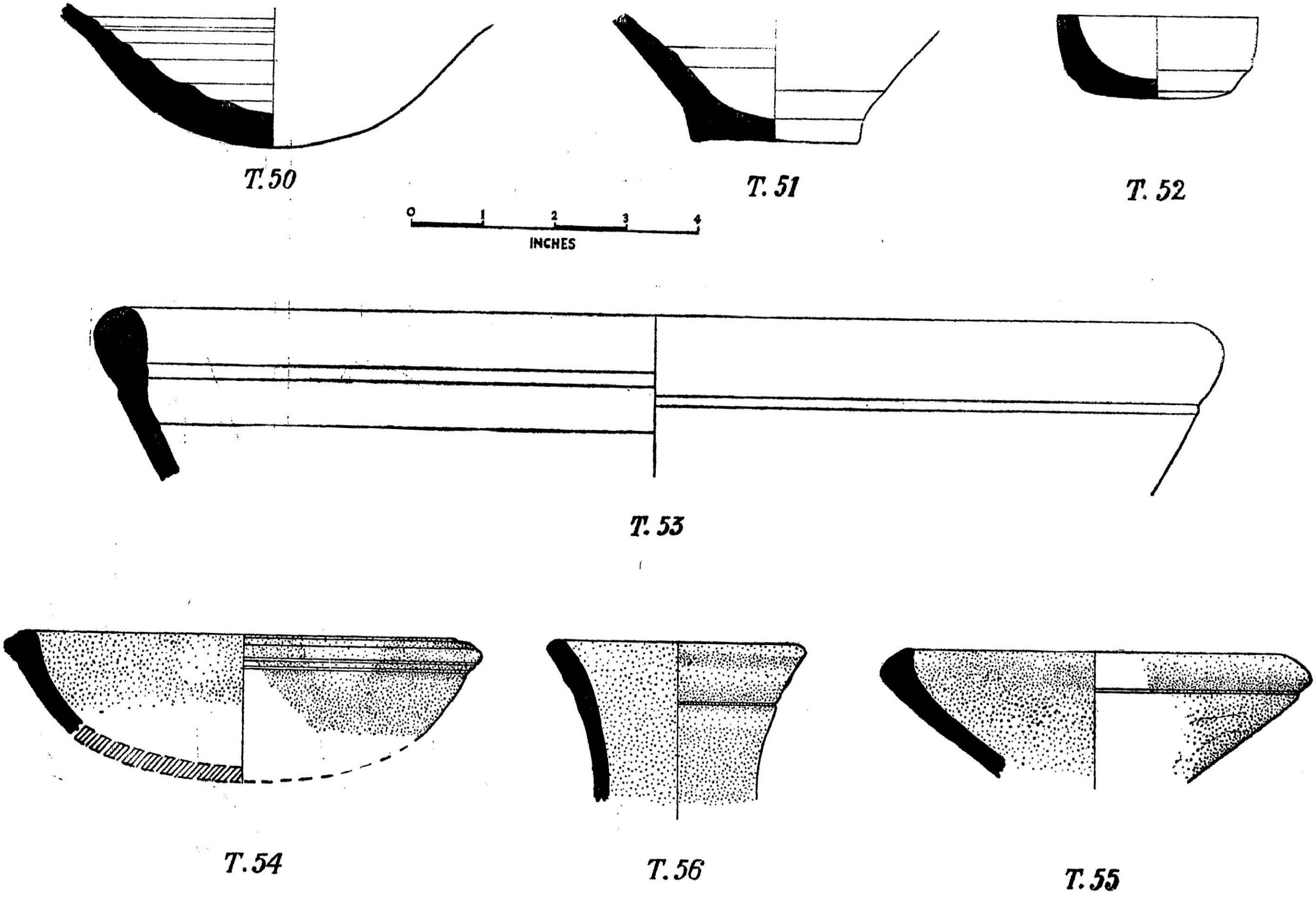


Fig. 30. Types 50–56. (New Types) Red, Black-and-Red and Red Ware. Layer 4, Period II (B).
(*See pp. 68-69*)

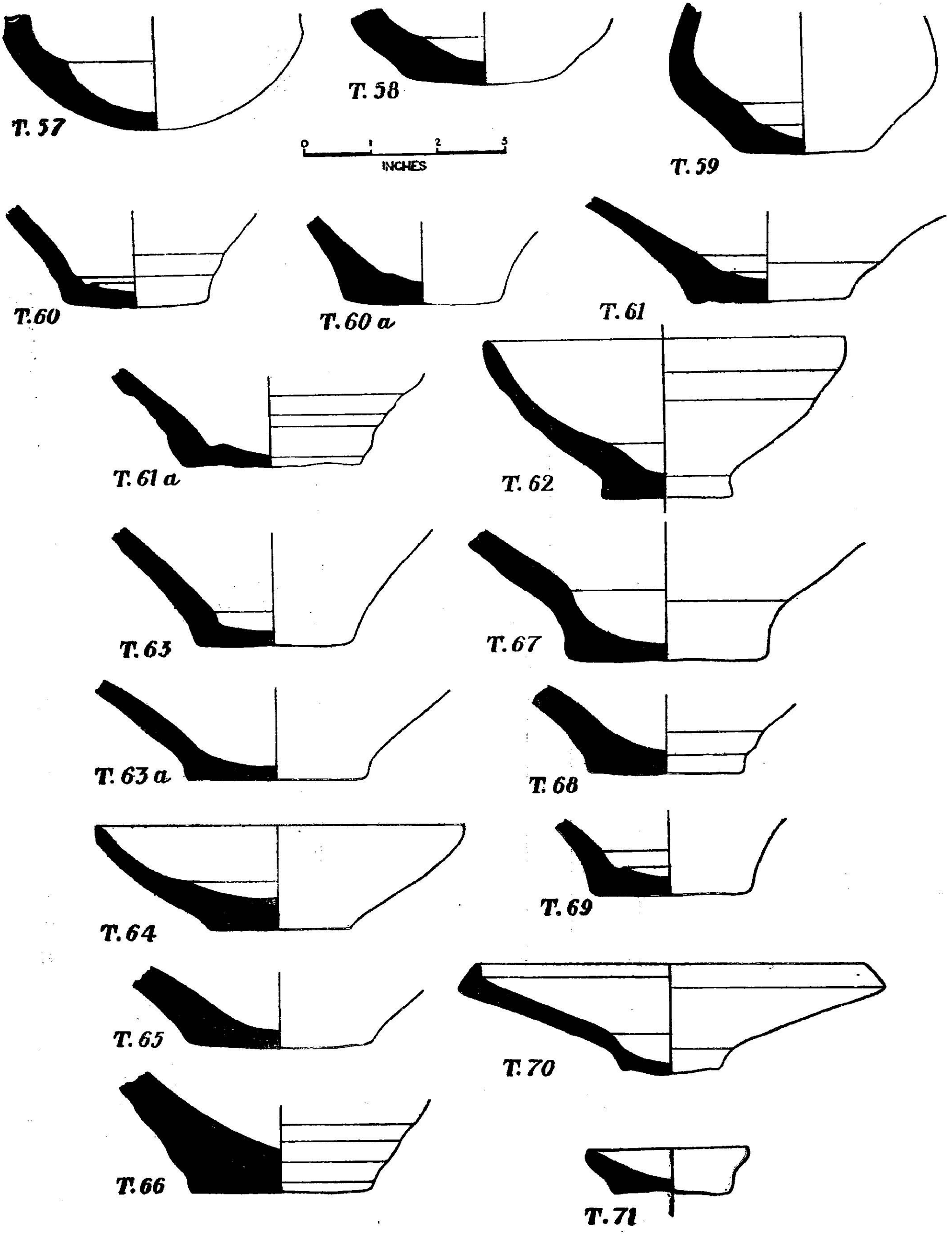


Fig. 31. Types 57–71. Red Ware (Bowls). Layer 3, Period IV

(See pp. 72-73)

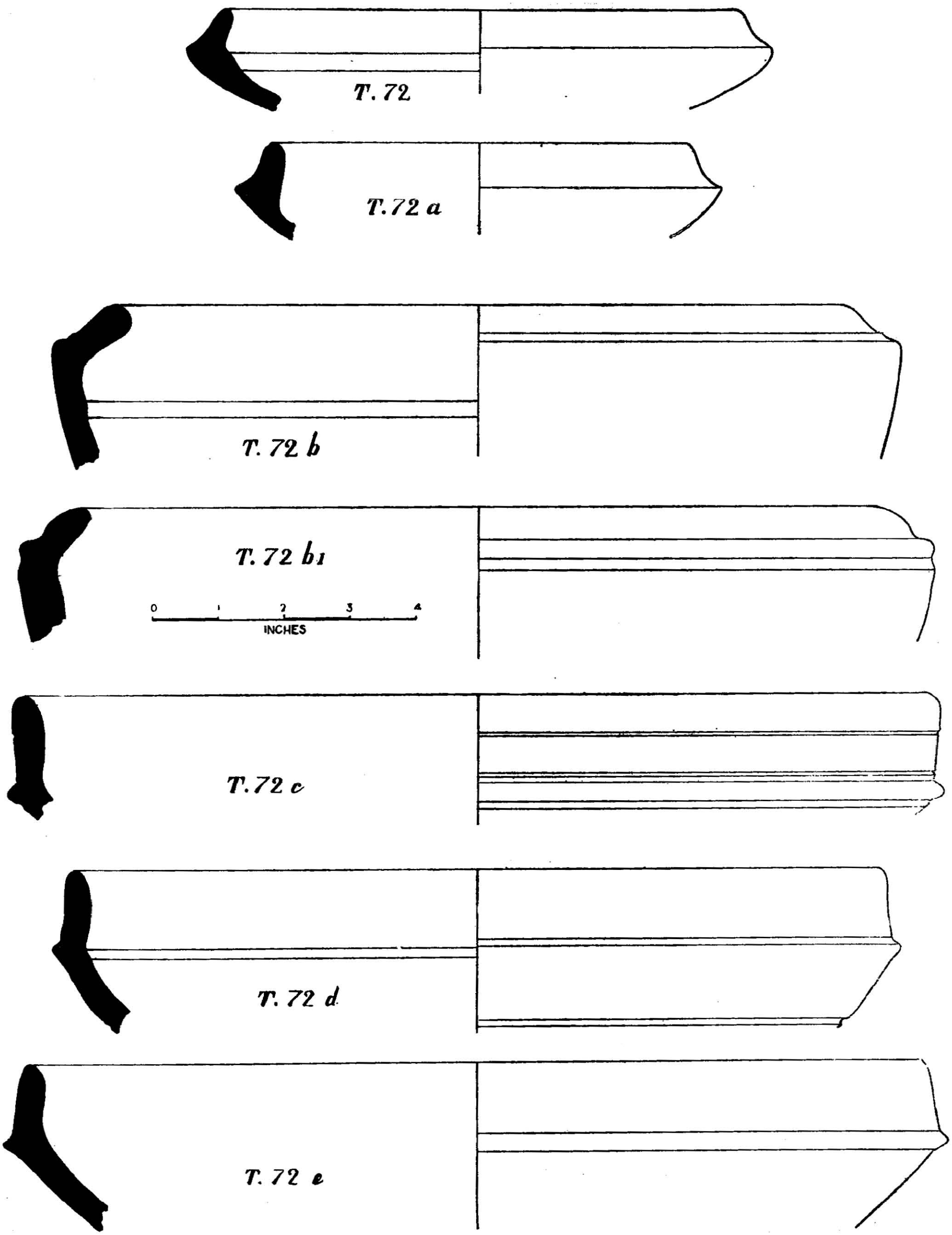


Fig. 32. Type 72. Red Ware (Dishes). Layer 3. Period IV.

(*See p. 74*)

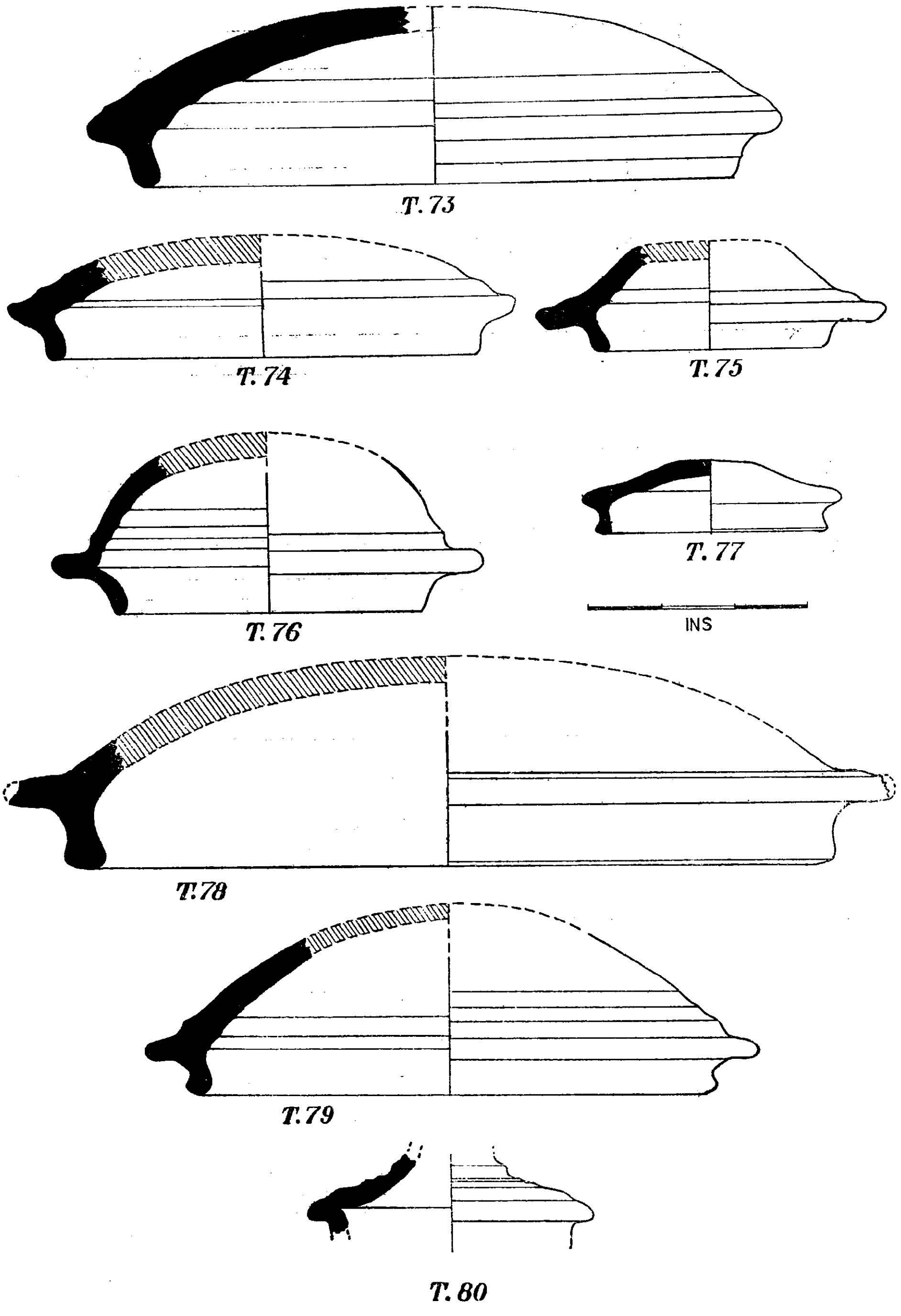


Fig. 33. Types 73-80. Red Ware (Lids), Layer 3. Period IV.

(*See p. 74*)

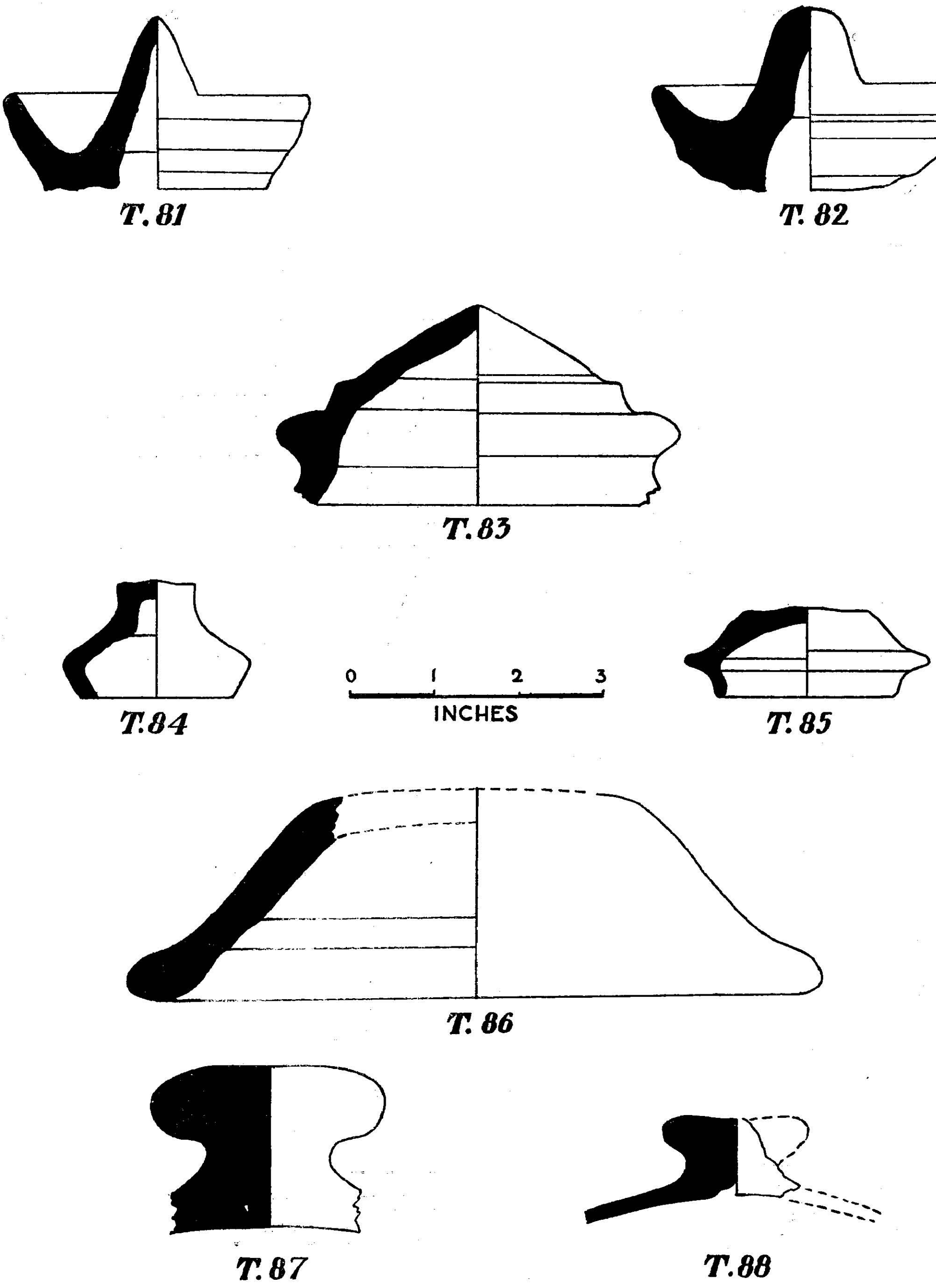


Fig. 34. Types 81-88. Red Ware (Lids), Layer 3. Period IV

(*See p. 75*)

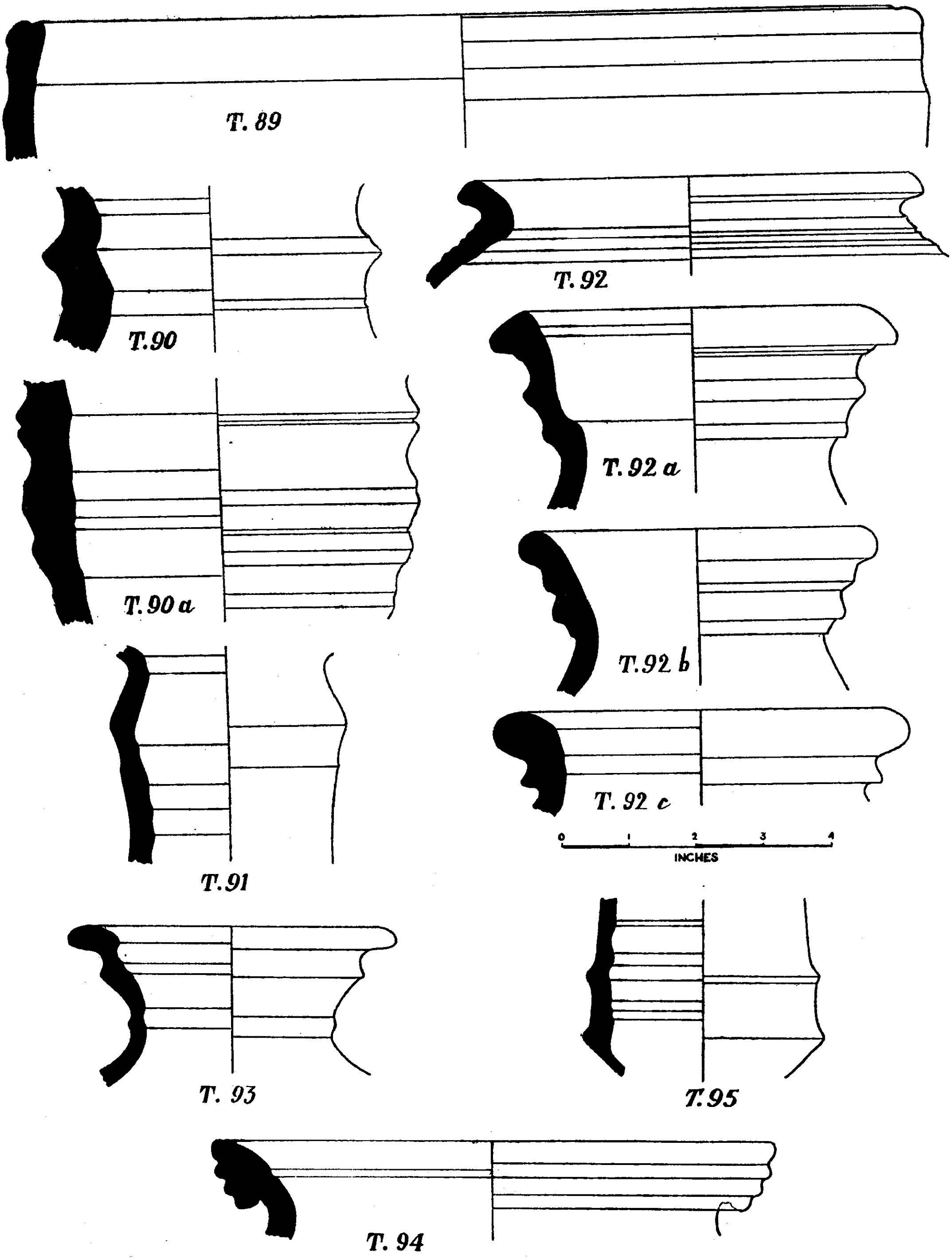


Fig. 35. Types 89-95. Red Ware (Ridged Necked Vessels.) Period IV.

(*See pp. 75-76*)

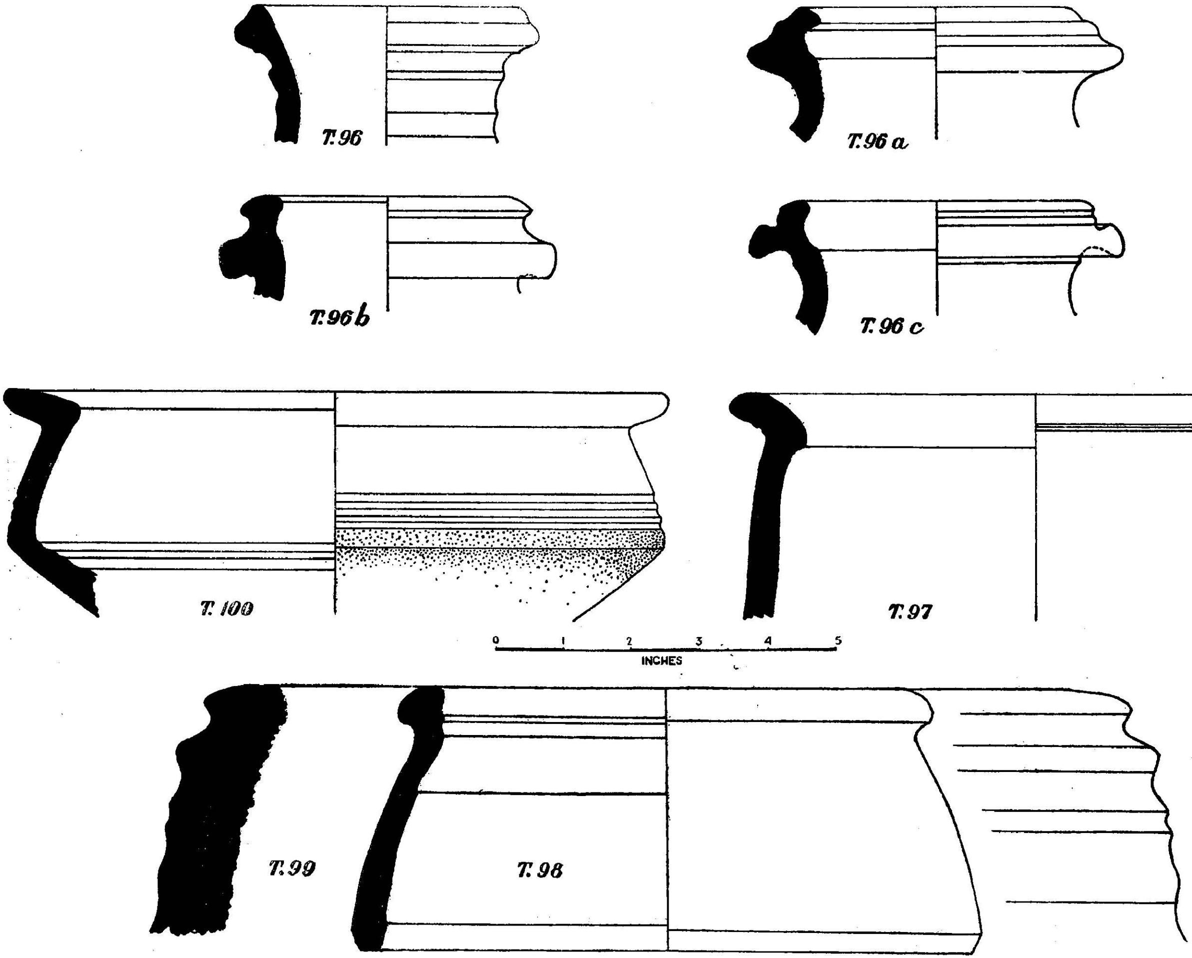


Fig. 36. Types 96-100. Red-and-Black and Red Ware, Period IV.

(*See pp. 76-77*)

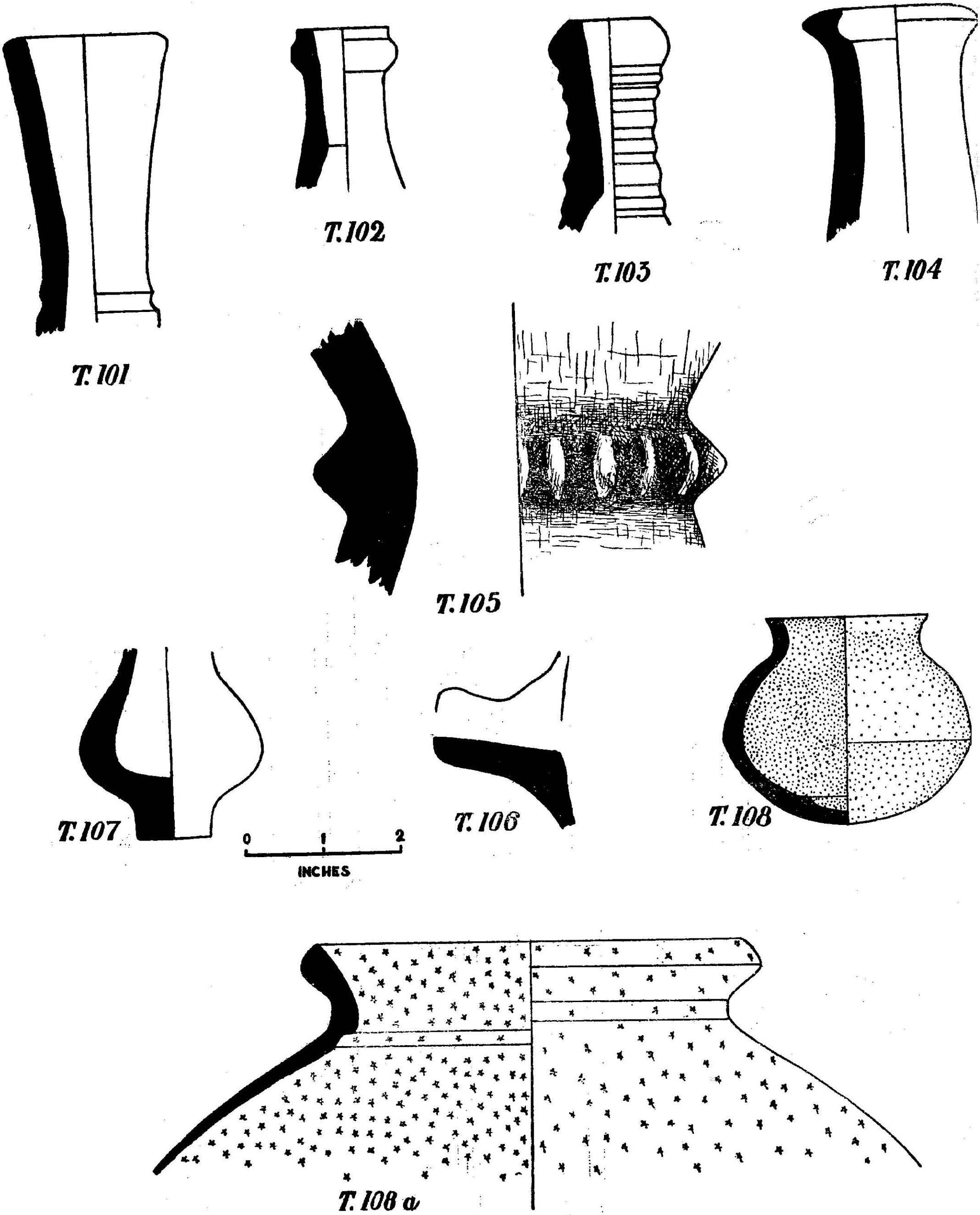


Fig. 37. Types 101-108a. Narrow Necked, spouted and Mica Ware. Period IV.
(*See pp. 77, 78, 84*)

having a broad, slightly rounded base, and the inner ring was meant for receiving the lid. Both the vessel and the lid are still being made, and some in glass.

41' Fragment, solitary, of a similar vessel, but with two grooves, and the body probably rounded. Glossy surface inside and outside. No. 4638, MG.N. A(4).

Half of a large dish-like vessel, with rounded base having an inner raised rim surrounded by a lip-like projection. In type and fabric, identical with that of Layer (5), No. 2590, K.W.N. X(3). [pl. XIII, 5].

41. Fragment, having an inner ring on the top, and lip projection (for holding), and slightly bulging, shallow (?) body. Burnished brownish black surface outside, inside smooth black. No. 2600, MG.N. A(5). Cf. similar lip. No. 2611, MG.N. C(5).

Tan Ware

In contrast to the famous Black-and-Red 'Megalithic' type of ware (Types 27—39), we have comparatively a few sherds of what may be best described as " Tan, " or " Tan-and-Black " ware. The outer surface and often the inside is tan or light yellow-brown, with patches of black both inside and outside. No complete vessel has been found, so what the exact proportion of these shades of colours was, cannot be determined. The fabric, as in Black-and-Red, varies from thin (1/2 cm.) to medium thickness (1 cm.). The clay is coarse and gritty, the surfaces without any wash or slip, but well burnished, giving a smooth touch. If a conjecture may be hazarded the fabric reminds one of the imitation of rouletted ware from Arikamedu.

Fig. 28. (42-47, 48, 48a).

Type 42 Small Storage Jar

42. In shape it is identical or very similar to T.27 in Black-and-Red Ware. This was described as a drinking vessel or a small storage jar(*Barṇi*). It has a beaded rim, a neck, and a slightly globular body tapering to a flat base. Smooth tan surface (though now slightly coarse), grooves inside, again as in T.27. No. 5731, MG.N. E(5). [pl. XIV, 2].

Type 43 Vessel with Carinated Body

43. Fragment, vessel with everted rim and carinated body, almost similar to T.9 (Red Ware, Fig. 14), T.40 (Ordinary Black Ware, Fig. 27), but with more delicate and finer fabric. Base unknown but probably rounded. Smooth burnished outside, but inside untouched, showing fine wheel-marks. No. 6450, MG.N. E(5).

Type 44 Bowl

44. Fragment, bowl, gently incurved side and tapering, with a slight concave bend towards a flat base. Fine fabric with polished surfaces. No. 6052, MG.N. E(5). From the well. Exactly identical shape does not occur in ordinary Red, Black, or Black-and-Red Ware.

44a. Fragment, bowl-like vessel with a body below the belly slightly bulging, and sides above the belly sharply drawn in, shallow grooves on the belly. Fine light fabric with smooth surface, well levigated clay. MG.N. F(5).

Type 45 Beaded Bowl (?)

45. Fragments of probably a beaded bowl, with well marked groove and raised bands, below slightly beaded rim. Light fabric of well levigated clay, but surfaces coarse. No. 6049-50, MG.N. F(5).

Type 46 Large, Thick-Sided vessel with Flaring Rim.

46. Fragment of a thick-sided large vessel, with flaring rim, three well marked bands below the rim. Smooth tan outer surface, inside black. No. 6053, MG.N. E(5).

Type 47 High-Necked vessel

47. Fragment, high neck, with straight sides. Fine fabric, with smooth surfaces. No. 5237, MG.N. (5). From the well.

*Types 48, 48*a. *Lids* (*Cf. Type* 38, Fig. 27)

48. Fragment, lid, with short cylindrical knob, glossy smooth surface, inside coarse, unstratified but probably from this layer. No. 6039, MG.N.

48a. Fragment, lid, with short, nipple-shaped knob. Tan and smoky smooth surface. No. 639, MG.N. E(4).

Fig. 29. (49-49d)

Type 49 Dishes

A few sherds of dishes in this ware were found. They seem to represent two or three sub-types in shapes and a similar division may be made according to the colour of the fabric, which is tan, chocolate, and even red. But fundamentally these belong to the group of Fine Tan ware.

49. Fragment, dish with almost straight sides, and rounded, shallow flat base. Fine light fabric with surfaces smooth and glossy owing to polishing over a surface, over which some slip or wash has been applied. No. 6023, MG.N. C(5).

49a. Fragment, dish, almost similar to above but sides slightly incurved, colour light tan. No. 6060, MG.N. G(5).

49a[1]. Fragment of almost a similar dish having a thin ledge at the base and greyish tan in colour, with surfaces smooth. No. 6057, MG.N. G (5).

49a[2]. Fragment, dish, with straight sides. No. 6058, MG.N. G (5).

49b. Fragment, dish with a shallow groove, outside tan, but inside mostly black, or nearly so. No. 6014, MG.N. A(5).

49c. Fragment, with straight sides, indrawn from almost an angular curve at the base which should be quite flat. Tan-black smooth surfaces, the clay does not seem to be well levigated, as it contains a large lump of lime concretion. No. 6016, MG.N. B(5).

49d. Fragment, dish, with a series of thin grooves below the bulging body, and incurved sides. Fine fabric, with surfaces smooth and red, with a black patch outside near the base. No. 5232, MG.N. D(5).

Period II B

This period, as discussed under Chronology, also falls into the Early Historic. The following earlier types (Period II A) survive with little or no significant variations. There are, however, a few types, which are discussed and illustrated.

(a) Principal types surviving from layer 5.

Red Ware[1]

T.1′1	Fragment of a rim. No. 351A, MG.N. E(4).
T.1′a	Fragment of a rim. No. 3496, MG.N. D(4).
T.1′c	Fragment of a rim. No. 3594, MG.N. D(4).
T.7′	Fragment of a neck. No. 4627, MG.N. A(4).
T.8′b	Part of a globular vessel, of a much better fabric than T.8. Externally it has a smooth burnished surface over a thin coating of red slip. No. 5229, MG.N. D(4). [pl. XIV, 4].
T.9′	Fragment of a neck. No. 5959, MG.N. F(4).
T.9′b	Complete vessel No. 5222, MG.N. [pl. XII, 3].
T.10′b	Fragment, rim, and upper half. No. 4593, MG.N. F(4).
T.13′a	Fragment. No. 6043a, MG.N. B(4).
T.13′c	Fragment. No. 6043b, MG.N. D(4).
T.17′	Fragment. No. 2275, MG.N. D(4).
T.17′a	Fragment. No. 2272, MG.N. D(4).
T.17′c	Fragment. No. 2546, MG.N. D(4).
T.17′e	Fragment. No. 2527, MG.N. F(4).
T.20′	Fragment. No. 6020a, MG.N. E(4).
T.21′	Fragment. No. 2769, MG.N. E(4).
T.21′a	Fragment. No. 2718, MG.N. A(4).
T.23′	Fragment. No. 2618, MG.N. F(4).
T.26′d	Fragment, rim and shoulder, MG.N. G(4), with an incised ∼ mark below the rim.

Black-and-Red Ware

T.27′	Almost half of a vessel. No. 5201, MG.N. A(4).
T.28′	Lower half of a vessel, without inside corrugations. No. 5201a, MG.N. F(4).
T.29′	Fragment, base. No. 5201 b-d, MG.N. A(4).
T.30′	Fragment, globular vessel, No. 5201f, MG.N. D(4).
T.31′	Fragment, base. No. 6376, MG.N. E(4).
T.33′	Fragment, base. No. 4570a, MG.N. E(4).
T.34′	Fragment, No. 4570 d-e, MG.N. (4).
T.35′b	Fragment, bowl. No. 6285, MG.N. A(4).
T.35′c	Fragment, bowl. No. 5221a, MG.N. C(4).

1. For the explanation of this arrangement, see under ‘ Explanation,’ above p. 38.

T.35′e Fragment, bowl. No. 6356, MG.N. A(4).
T.35′h Fragment, bowl. No. 5222a, MG.N. G(4).
T.35′1 Fragment, bowl. No. 6410, MG.N. A(4).
T.37′ Fragment of a large dish, 6 inches in radius, which is only slightly less than the largest dish from Layer 5. (Fig. 26, T.37).
T.37′a Three fragments No. 6410 a–c. Of these No. 6410a has a fine external black gloss. MG.N. B(4).
T.37′c Fragment of a dish. No. 6410d, MG.N. C(4).
T.37′d Fragment of a dish. No. 6410e, MG.N. A(4).

Ordinary Black Ware

T.41′ Fragment of a Handi (cooking pot?) No. 2613, MG.N. D(4).

Tan Ware

T.48′ Fragment of a large, thick dish. No. 6019, MG.N. C(4).
T.48′a Fragment of a dish. No. 6061, MG.N. G(4).
T.48′a2 Fragment of a dish. No. 6002, MG.N. A(4).
T.49′a Fragment of a dish. No. 2509, MG.N. E(4).
T.49′a2 Fragment of a dish. No. 6031, MG.N. E(4).
T.49′c Fragment of a dish. (in Black-and-Red) No. 6401, MG.N. A(4).

(b) New types from period II b.

Red and other Wares. Fig. 30. (Types 50—71)

Type 50

50. Fragment, bowl, with thick, heavy, rounded bottom, and flaring side, *full shape unknown*. Coarse red outside, but there is red slip over shallow inner corrugations. No. 2754, MG.N. D(4).

Type 51

51. Fragment, bowl, with a low, tapering, broad, flat base, very crudely made, very coarse fabric, without any slip. No. 2754a. MG.N. D(4).

Type 52

52. Very small shallow rimless bowl, with thick walls and base. Though the fabric is coarse, it has a pleasing shape and finish. No. 149, MG.N. (4).

Type 53 Wide Mouthed vessel (Kuṇḍī, flowerpot?)

53. Represented by a single sherd, No. 2413. Fragment of a vessel having a wide open mouth, resembling a *Kundi* (flowerpot) having a very thick, rounded, rimless edge and tapering wall. The inner as well as outer surfaces have a bright plain red slip, applied before or after careful burnishing. No. 2413, MG.N. E(4).

Type 54

54. Fragment of a rimless bowl with thickened edge, having thin shallow corrugations on the outside. Smooth black inside, black and tan outside. No. 6359a, MG.N. (4).

Type 55

55. Fragment of a rimless bowl, with a sharply inturned edge, having a thin groove below it. The base is unknown but it may have a low stand. Smooth black inside, coarse outside. No. 6359b, MG.N. D(4).

Type 56

56. Fragment of a high, narrow necked vessel. Smooth black inside, coarse outside. No. 6171c, MG.N. E(4).

PERIOD III

RED POLISHED AND GREY ROULETTED WARE

The surface debris of the trench K.W.N. as well as MG.E.N., and layers 3 and 4 of the latter yielded a few sherds of the Red Polished ware and a couple of Grey Rouletted ware. Since, not a single sherd of these wares was found in the deeper levels of the main trench MG.N., while very few sherds of the Black-and-Red ware were found from the layers 4 and 3 of MG.E.N., as well as from the debris of K.W.N., it may be inferred that these, imported or imitated Roman Wares, reached Nasik after Period II. Provisionally, therefore, this pottery is assigned to Period III, a period, it may be repeated, missing in the deeper layers of MG.N.

Of these few sherds, the one definite importation is No. 850. I had occasion to show this to Professor (now Sir Mortimer) WHEELER and Dr. KENYON in London. They both were of the opinion that the sherd was definitely Samian. From amongst the other pieces, three are necks of sprinkler vessels, and a bowl. It is not ascertained yet whether the former are importations or imitation of the bronze proto-type which was found at Kolhapur[1]. But in all cases from their fabric and type they are distinguished from other local ware. All are made of fine levigated clay, uniformly fired, having a dull red burnished surface, or treated with bright red slip, probably after firing, as it has worn off in some cases.

The same is true of the rouletted ware.[2]

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1. See, SANKALIA AND DIKSHIT, *Excavations at Kolhapur*, p. 61, and pl. XIX, A. *Anc. Ind.*, No. 4, Fig. 46, p. 280. For distribution of Red-Polished ware see Subba RAO, *Baroda Through the Ages*, (Baroda, 1953), pp. 56-64.

2. See, *Anc. Ind.*, No. 2 (From Arikamedu), pl. XXV-XXVI, No. 4 (from Brahmagiri and Chandravalli), pl. CXI and CXXIII respectively; No. 5 (from Sisupalgarh), pl. XLII.

Fig. 42

Red Polished ware

(a) Sprinkler with a side-spout, reconstructed from three fragments as follows :—

i. Top of sprinkler mouth, having a smooth red, bright surface, now slightly crackled. From the sides, the polish and red slip have gone. No. 881, MG. E.N.(3).

ii. Fragment, base of spout, having a smooth red surface without slip, the underside is coarse. No. 77, K.W.N. (3). [pl. XIX, 10-12].

iii. Fragment, globular side of the belly, smooth, polished red-slipped surface, inside coarse, very light in weight. No. 46, K.W.N. Unstratified.

(b) Rimless bowl, from several fragments of smooth polished red-slipped surfaces, of medium thickness, having extremely shallow grooves and a shallow raised decoration, probably by a slight pinch with finger nails, both inside and outside, No. 96, K.W.N. (3). [pl. XIX, 8].

(c) Top of a sprinkler, smooth, dull red surface, inside coarse. No. 71, K.W.N. Unstratified. [pl. XIX, 9].

(d) Fragment, globular portion (probably sprinkler), dull, but smooth outer surface, coarse inside, thin and extremely light fabric. No. 72, K.W.N. (2). [pl. XIX, 16].

(e) Fragment, base and side of a dish, having beautiful lustrous red surfaces, very light, thin fabric. Samian Ware. MG.E.N. Ie. (2). [pl. XIX, 17].

(f) Fragment, rim, surfaces originally smooth bright red, but crackled. No. 870, MG.E.N. (3). [pl. XIX, 15].

(g) Fragment of carinated shoulder, smooth bright red surfaces now crackled, very thin light fabric, comparable to true Arretine. No. 767, MG.E.N. (2). [pl. XIX, 14].

(h) Fragment, thin, bright red ware. No. 882, MG.E.N. Ie. (3).

(i) Fragment of the globular part of an extremely thin, chocolate coloured vessel, having a smooth surface, but the inside, though coarse, marked by fine close grooves, suggesting a very fast wheel. MG.N. C(1). [pl. XIX, 13].

Rouletted ware

(j) Fragment of rouletted ware, polished light grey surfaces, the upper shows a portion of a circular band, the under a broad, lightly incised circular band. No. 868, M.G.E.N. If. Unstratified. [pl. XIX, 1].

(k) Fragment of a rouletted ware, the upper surface is polished black with a little roulette band intact ; on the under surface the black has worn out so that the greyish surface has been exposed. No. 841, MG.E.N. If. Western section of the trench, almost top soil. The rouletting is of the type found in some vessels from Arikamedu. [Cf. *Anc. Ind.* No. 2, pl. XXV. B.No. 8, pp. 45-49.] [pl. XIX, 2].

(l) Fragment probably of rouletted ware. Polished black inner surface, outer or under coarse and greyish without black slip MG.E.N. If. (2).

(m) Tiny fragment, having both the surfaces polished black. No. 898, MG.E.N. Unstratified.

(n) Small fragment, probably rouletted ware. Surfaces smooth but have lost their black slip. No. 898a, MG.E.N. Unstratified. [pl. XIX, 3].

(o) Fragment, probably of a small dish or bowl of rouletted ware, having fine, polished black surfaces, No. 5068, MG.E.N. Ie(4). [pl. XIX, 5].

(p) Fragment, rim, everted, of a rouletted-like fine, thin, polished ware. Unstratified. [pl. XIX, 6].

Period IV

Period IV pottery comprises all the types from layers 3 to 1 in the main trench as well as from the upper layers from K.W.N., MG.E.N., and MG.N.N. The main reasons for grouping all these together is that though there is some evidence to divide the upper layers in MG.E.N. into Mughal and Maratha or into Periods IV and V respectively, elsewhere, particularly in MG.N., the first two layers are very much disturbed, while the third shows distinct overlap in types as well as in fabrics. Thus the latter cannot be put into a distinct period. Further there are many common types and fabrics between the mixed layers of MG.N. and the stratified layers of MG.E.N., showing that the disturbance was during the Mughal-Maratha periods.

The pottery types are, therefore, arranged as follows :—

(*a*) Principal types surviving from Period II (Layers 5 and 4).

(*b*) New types.

The former are merely cited layerwise and by type as before, the latter discussed and illustrated.

(*a*) Principal types surviving from Period II.

Red Ware

T.8″b	Small drinking vessel with narrower mouth than T.8b. No. 325, MG.N. D(3). *Not illustrated.*
T.8″e	Base of a vessel only. No. 4532a, MG.N. F(2).
T.9″a	Vessel with carinated shoulder. No. 6252, MG.N. D(3). A sherd of a similar vessel from MG.E.N. No. 6252a. MG.E.N. Ik(3).
T.10″a	Fragment. No. 3664, MG.N. E(2).
T.10″b	Fragment. No. 4601, MG.N. F(2).
T.12″a	Fragment, bowl. No. 2147, MG.N. A(3).
T.13″	Bowl (reconstructed). No. 6043, MG.E.N. (3).

Black Ware

T.23″c	Fragment, lid or dish. No. 2612, MG.N. A(3).
T.23″c	Fragment, lid or dish. No. 4659, MG.N. B(2).
T.26″	Fragment, rim. No. 4100b, MG.N. (2).
T.26″c	Fragment, large storage jar. No. 694a, MG.N. (3).
T.26″d	Fragment, rim. No. 4154, MG.N. E(2).
T.26″e	Fragment, rim. No. 4086 MG.N. F(2).
T.27″	Lower half of a vessel. No. 5202a, MG.N. A(3).

Black-and-Red Ware

T.29″ Fragment, base. No. 5201e, MG.N. F(2).

T.30″ Fragment, base and side. No. 5201f, MG.N. C(2).

T.35″ Fragment, bowl. No. 6307a, MG.N. (3).

T.37″ Fragment, dish. No. 2015, MG.N. G(3).

T.37″a Fragment, dish. No. 2011, MG.N. G(3).

T.37″d Fragment, dish. No. 6308, MG.N. (3).

Ordinary Black Ware

T.40″ Fragment, No. 2816, MG.N. E(2).

T.41″ Fragments, Nos. 2598-97, MG.N. A(3).

T.45″a Fragment of a bowl, with a slightly externally beaded rim. The type is similar to T.45 (Tan Ware), but the fabric of this is light brown, from which the slip is wearing off. It has a very shallow, thin, raised band on the outside. No. 715, MG.N. A(3). *Not illustrated.*

T.49″b No. 2221, MG.N. C(3).

(*b*) New Types. From Period IV.

Fig. 31. (57-71)

Type 57 Bowls

The bowl types occurring in this period have comparatively thicker walls and are coarse in finish.

57. Fragment, lower portion of a heavy round bottom vessel (bowl ?), having a ledge, (the belly ?) or (the edge ?) smooth red outside with a red slip, inner is graduated, the base is very coarse, while the broader portion above it is smooth, but without slip. No. 4597, MG.N. A(3).

Type 58 Bowl

58. Fragment, base of bowl having very thick heavy, rounded coarse blackish base. The inside is still coarser and fully black. Full shape not known. No. 4597a, MG.N. C(2).

Type 59

59. Fragment, base and side of a vessel (bowl ?), with thick, small, flat base, and thicker globular side, very coarse internally and externally. No. 4597b, MG.E.N. E(4).

Type 60

60. Fragment, bowl, but with narrower sides. This bowl has traces of red slip inside. No. 2754b, MG.N. D(3).

Type 61

61. Fragment, base, bowl. No slip. Coarse red surfaces. No. 2754c, MG.N. D(2).

Type 61a

61a. Fragment, bowl, with greatly flaring sides, which have irregular grooves outside. Broad, flat base. Very coarse fabric. No. 2754d, MG.N. C(2).

Type 62

62. Fragment, bowl, with flaring side but gently incurved at the top, tapering, narrow, flat base. Very crude. The vessel has a dusty, muddy coating. No. 1759, MG.N. G(2).

Type 63

63. Fragment, bowl, with a deep base inside. Irregular heartshaped, flat base. No. 1759a, MG.N. B(2).

Type 64

64. Fragment, saucer-like shallow bowl, with an irregular, crude, ringed base. No. 1759c. MG.N. B(2).

Type 65

65. Fragment of a thick, bowl-like vessel with a tapering base, exact shape indeterminate. Fabric coarse. No. 1759d, MG.N. D(3).

Type 66

66. Fragment of a very thick, bowl-like vessel with a tapering base. The inner side is comparatively smooth and has red slip. The outer is extremely coarse. No. 1759e, MG.N. B(3).

Type 67

67. Fragment of a vessel, similar to T. 61, but having a deeper inner base, and is coarse inside and outside. No. 1760g, MG.N. E(2).

Type 68

68. Fragment of a vessel, similar to T. 62, but slightly less thick fabric and not so deep. No. 1907, MG.N. G(2).

Type 69

69. Fragment, base only, of a vessel (bowl ?) having a shallow groove on the inner side of the base. The sides were probably steeper and flaring. No. 1759f, MG.N. D(3).

Type 70

70. Fragment of a bowl, having flaring sides, with a faceted slightly internally overhanging rim, and a crude but well projected ringed base. The surfaces otherwise smooth and not so coarse as in previous types. In every way a distinctive type. MG.E.N. Ie(4).

Type 71

71. Very small, shallow, rimless, broad flat based bowl, with low flaring sides, the edge of which has vertical incisions all round. This looks like modern cake-jackets. The inside surface is smooth. No. 149a, MG.N. B (2).

Fig. 32. (72, 72a-72e)

Dishes

In this layer, dishes of almost new types or dishes with merely different rims appear. They have a small low or fairly high rim which is indented and turns very sharply inside. The fabric is generally coarse red, with or without slip, except with one exception.

72. Fragment of a shallow dish, with rounded base, and a very low rim which sharply turns in. Red slip with smooth surfaces. No. 2749, MG.N. D(2).

72a. Fragment, similar to T. 70, having a sharper ledge-like junction of the rim and body and a turned-in rim, rounded at the top. Dark brown with smooth surfaces. No. 2750, MG.N. D(2).

72b. Fragment, similar to T. 70, but fabric coarser and thicker, and a groove and a thin raised band on the lower part of the rim. No. 2403, MG.N. E(2).

72c. Fragment of a dish, having a small ledge below slightly inturned rim, with a high straight wall. Very coarse fabric, without slip and black on the edge of the rim. No. 2398, MG.N. E(2).

72d. Fragment, similar to T. 70'c but the wall of rim slightly smaller, and the fabric better. No. 2402, MG.N. D(2).

72e. Fragment of a dish, similar to T. 70'c, but the side slightly longer, and the fabric very coarse. No. 2189, MG.N. B(2).

Fig. 33. (73-80)

Types 73-80 Lids

The lids in this ware, at this period, have generally a low roof, and a thicker ring, with a broad, deep groove on the outside. The fabric is usually coarse red, without any slip.

73. Fragment of a thick, large lid, having a low roof. Faint grooves outside and inside. No. 2704, MG.N. A(2).

74. Fragment of a smaller lid, with thick low roof. Faint grooves outside and inside. No. 2703, MG.N. A(2).

75. Fragment of a small lid, having a sharpened bevelled edge. No. 2752, MG.N. D(2).

76. Fragment of a small lid, with a comparatively high roof. It has a bright red surface. *The type comes from Layer* (4). No. 2718, MG.N. A(4).

77. Fragment of a very small lid with low roof. It has a finely sharpened edge, and a well marked groove. No. 2856, MG.N. A(2).

78. Fragment of a large lid, having a well projected roof-edge as in Period II, though the roof itself is low. No. 2702, MG.N. A(2).

79. Fragment of a lid, which has a roof comparatively higher than lids of roof in this period, a ringed base which is thick and flat. This type of lid may be taken as a link between the basic types of Period II and III.

80. Fragment of a unique type of lid at Nasik. Its upper surface is finely polished over a reddish slip, whereas the lid itself had a tapering top, probably ending in a knob. No. 6234, MG.N. D(3).

Fig. 34. (81-88)

Types 81-86 Lids

The figure represents types which are totally different in shape from those illustrated in Fig. 33, as they have some points of resemblance with the lids of Period II.

81. Lid, almost complete, with a conical central knob, and almost vertically upturned side and flat base. Crude, red, slipless surface. No. 6235, MG.N. B(2).
82. Lid, complete, with a truncated conical roof, slightly low, upturned side, and rounded base. Dirty grey ware. No. 6242, MG.N. B(2).
83. Lid, complete, with a low pointed roof, having well marked grooves and ridges, a slight protruding, rounded rim, with an inner ring. K.W.N. surface.
84. Small lid with a protruding, but truncated flat top, inturned, flat base. Surface.
85. Small lid of the older type, with a terraced, flat roof, a overhanging rim, and an inner ring. No. 786, MG.S.N. Unstratified.
86. Fragment of a thick lid, having a low, flat roof. The edge is finely rounded. MG.S. N(2).

Types 87-88 Lids with knob-handle

Handles of probably lids of this type appear for the first time in Layer 3.

87. Fragment of a lid with transverse, biconvex knob having tapering but blunt ends. No slip seems to have been used, and the surface is coarse red. No. 2144, MG.N. G(3).

    The origin of this type may be traced to Period II from which only one fragment comes.
88. Fragment of a lid as above, but much thinner, and with a smaller transverse knob. It has smooth surfaces. No. 623, MG.N. A(4).

Fig. 35. (89-95)

Type 89

89. Fragment of a large rimless bowl, having a very thick body and sides, the surfaces of which had a red slip over coarse surfaces. On the outside, the body is almost imperceptibly thinner near the top, so that a shallow depression is visible. No.2264, MG.N. D(3).

Types 90-90a Ridged ware

Only three or four sherds of these types of vessels have been recovered. From the fragments only, an idea of the true shape and size of the vessel cannot be had.

90. Fragments of a thick-sided vessel, probably the neck portion or similar such cylindrical part, marked by deep, broad grooves and bold ridges. Inside, both these are not very prominent. Traces of red slip outside, though the surfaces are rough inside and outside. No. 855a-b, MG.N. E(3).

90′a. Fragment of a vessel, similar to T. 90. Its outside is marked, however, by an alternating series of broader and narrower grooves, and the ridges are not prominent. The inside is also comparatively plain, though close wheel-marks are there. Traces of red slip outside, though surfaces coarse. No. 4589, MG.N. B(2).

Type 91

91. Only a solitary sherd of the cylindrical part of a vessel having a low ridge at the shoulder (?). Its body above sharply turns in, and had probably an everted rim. The inner part of the portion below the ridge is marked by shallow corrugations. The outside is smooth and had a bright red slip, but the inside is unslipped and coarse. No. 855c, MG.N. A(3).

Types 92-92c Ridged Necks

Layer(5) had given a type of vessels (*Cf.* Type 6c-6f) where the neck was narrow and its rim was cut into one or two grooves or corrugations. But we, now, have specimens where these grooves and ridges occur on the necks, or where, as in Type 96, the edge of the rim expands into a series of concentric circles or ridges.

92. Fragment of a vessel with a low everted rim, its shoulder marked by very low grooves and ridges respectively. The surface is crimson-black and well polished ; inside coarse red. No. 4693, MG.N. (3).

92′a. Fragment of a high narrow-necked vessel. Its outside has prominent grooves and ridges, which are not so prominent inside. Traces of dark red slip outside and on the inside edge of the rim. No. 2629, MG.N. A(3).

92′b. Fragment of a neck with external corrugations, plain inside. No. 2690, MG.N. E(3).

92′c. Fragment of a neck with external corrugation. No. 2421, MG.N. A(2).

Type 93

93. Fragment of a low, narrow-necked vessel with external ridges, and a deep depression below the edge of the rim inside. Crimson-red slip on this and the outside, rest unslipped, coarse brown. No. 2622, MG.N. B(2).

Type 94

94. Fragment, rim of a vessel which is externally cut up into three narrow but deep grooves and bold ridges. A narrow but shallow groove inside. Red slip. No. 2631, MG.N. A(3).

Type 95

95. Sherd of a cylindrical vessel, having prominent ribs outside and grooves inside. Smooth, red slipped outside surface, inside coarse and unslipped. No. 6819, MG.E.N. (1).

Fig. 36. (96-100)

Types 96-96c Vessels with Ridged-Neck and Ringed-Rims

96. Fragment of a narrow, high (?) necked vessel, which has shallow grooves and ridges on its outside, while the edge of its rim has a low inner ring, preceded by a shallow groove(or a projecting ring or ridge round the edge of the rim), smooth red slipped surfaces. No. 2623, MG.N. A(2).

96′a. Fragment of a vessel similar to T. 96, but there are no grooves on the outside, while the groove preceding the inner ring is deep. No. 2647, MG.N. B(2).

96′b. Fragment similar to T. 96a, but the groove preceding the inner ring is now very broad. No. 2626, MG.N. A(2).

96′c. Fragment of a vessel similar to T. 96′b, but its inner ring is on the same plane with the surrounding ring and projects over. No. 2625, MG.N. A(2).

Type 97 Straight-sided, Pateli-like vessel

97. Large fragment of a vessel with high straight sides, having an everted rim, with a deep, but slightly rounded bottom, exact shape unknown. The vessel when complete, would resemble the modern vessels called PATELI in brass, copper and other metals. *So far a unique type at Nasik.* The fabric is moderately thick, having a blotchy red and black appearance, which is smoothed but has no slip whatever. No. 2604, MG.N. B(2).

Type 98

98. Large fragment of a unique type of vessel, perhaps a pottery stand, which has a narrow mouth, broader body but no bottom. Instead the bottom end has a flat base, with its edges well smoothed from inside and slightly caving in from outside. Coarse, light red fabric, full of grit, sand and lime particles, but well baked. No. 1429, K.W.N. (3).

Type 99

99. Fragment of a vessel with extremely coarse and uneven surface, with a large groove below the rim, and very shallow below. Hand-made. No. 1429a, MG.E.N. Ik(3).

Type 100

100. Large fragment of a vessel with wide mouth, everted, flat-topped rim, angular side and heavy slightly rounded base. The fabric is very thick for the size of the vessel, with coarse surfaces, red slipped inside, outside the upper portion is red, but that along and partly below the carination is blackish, while the base seems to be red. The inside of the base has grooves. No. 4070, MG.N. B(2).

Fig. 37. (101-108)

Types 101-108 Narrow Necked, Spouted and Miscellaneous Types

101. High, narrow neck of a *Kujah* type vessel. Two irregular grooves towards the base. Bright red, smooth surface externally, internally dull and coarse, for want of burnishing and slip. No. 6264, MG.E.N. (2).

102. High, narrow neck of a *Kujah* or a bottle-shaped vessel. It has an externally beaded rim, which is flat on top. Dull brown smooth surfaces. MG.N. Unstratified.

103. High, ribbed neck of a vessel which becomes very narrow towards the base. Smooth, bright red slipped surfaces. No. 6205, MG.N. C(1).

104. High narrow neck of a *Kujah* type vessel. It has broad, flattened, overhanging edge. Originally smooth and bright red externally, but coarse internally. No. 6205a, MG.N. A(2).

105. Neck portion of a large, thick walled vessel. The neck has a prominent corrugated rim, and seems to have been covered with a white, lime-like substance. Very coarse surfaces, probably hand-made. No. 6205b, MG.N. G(1).

106. Short, side-spout of a vessel, originally with smooth bright red surface externally. No. 6205e, MG.N. Unstratified.

107. Small vessel with a solid projected flattish base, narrow mouth (rim broken) and bulbous body. Coarse, dull brown surfaces. No. 5228, MG.N. F(2).

108. Small vessel, with rounded base, bulbous body, and a comparatively narrow neck, having a flat top. Coarse reddish black body, thin, whitish film inside. No. 5228a, MG.N. Unstratified.

Black-and-Red Ware

Fig. 38. (109-117)

Types 109-117 Bowls and Dishes

109. Fragment, rimless bowl, with almost vertical upper side, and rounded base. No. 1845, MG.N. G(2).

110. Fragment, rimless bowl with straight outturned sides, and flat base. No. 1836a, MG.N. (2).

111. Fragment, rimless bowl, with slightly inturned side, angular cut base, which is slightly rounded. No. 1836a, MG.N.

112. Fragment, rimless dish or bowl, with thin sides, fine and smooth, turning at the edge, which is sharpened. No. 1836b, MG.N.

113. Small rimless bowl, with a low ringed base, and grooves near the edge. No. 6358, MG.S.N. (2).

114. Small rimless bowl, with flaring top, slightly concave sides and rounded base.

115. Small rimless bowl, straight sides, with ringed base. No. 6342, MG.S.N. (2).

Tan Ware

Types 116-117

116. Small fragment of a rimless bowl, with thick, straight sides, and rounded base. No. 6024, MG.N.

117. Small fragment of a rimless bowl with slightly flaring sides, and perhaps a ringed base. Burnished smooth over a thin slip of the same colour as the core No. 6001, MG.N. A(3).

Ordinary Black Ware. (*Cf.* Fig. 27 and Fig. 40).

Very few sherds of Ordinary Black ware turned up in layers 5 and 4. Even from layer 3 they are not many. They are comparatively more, however, from layers 2 and 1. As Chinese porcelain pieces also came from these layers, most probably they belong to the latest period of the occupation of the mound. The sherds comprise mostly rim fragments. So a fuller idea of the shapes of all the vessels, is not possible. The fabric of these vessels is coarse, but usually the surface is well burnished. Nothing seems to have been applied over it before burnishing.

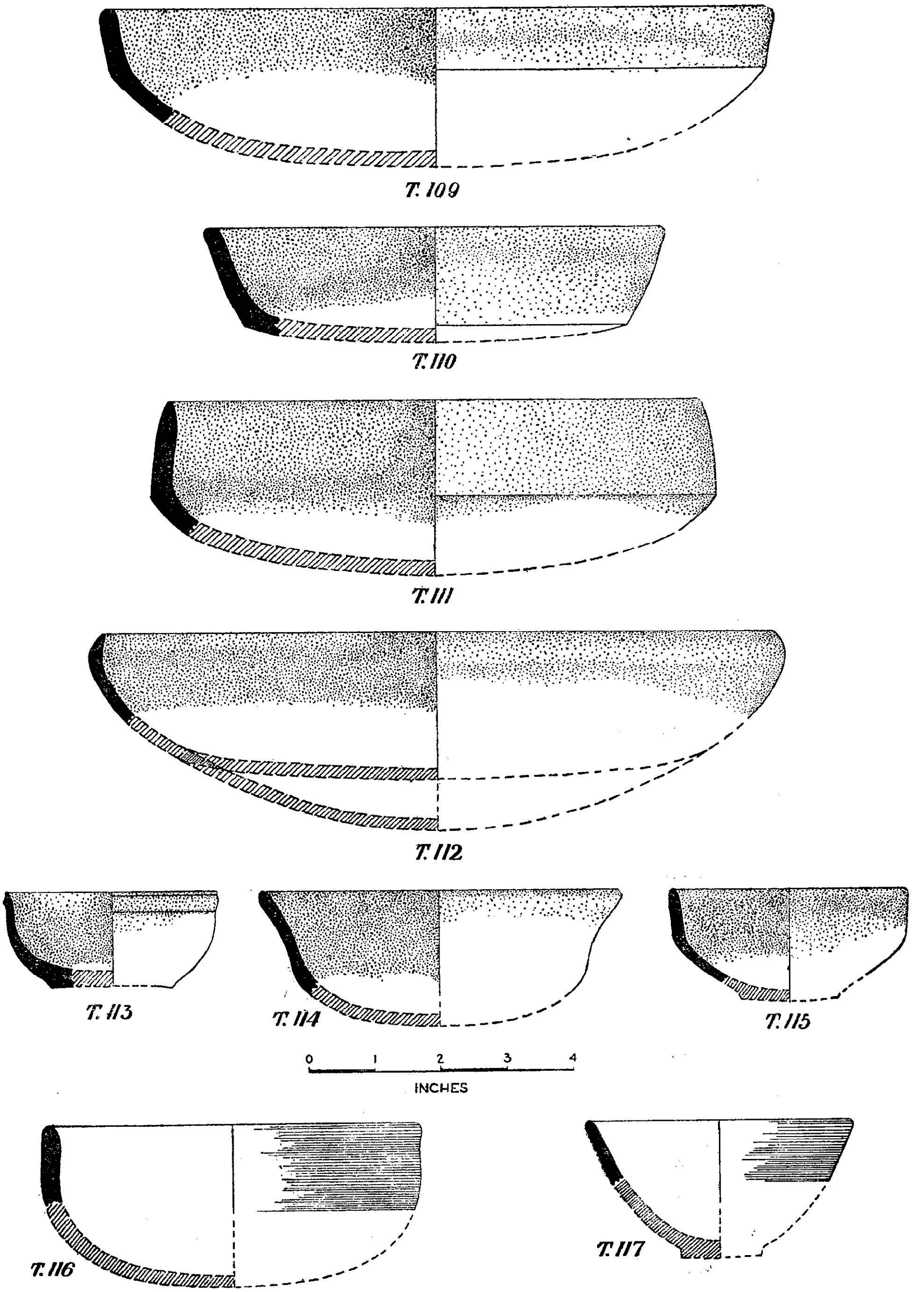


Fig. 38. Types 109–117. Black-and-Red Ware (New Types) and Tan Ware (See also Types 27-29 and 42-49). Period IV.

(*See p. 78*)

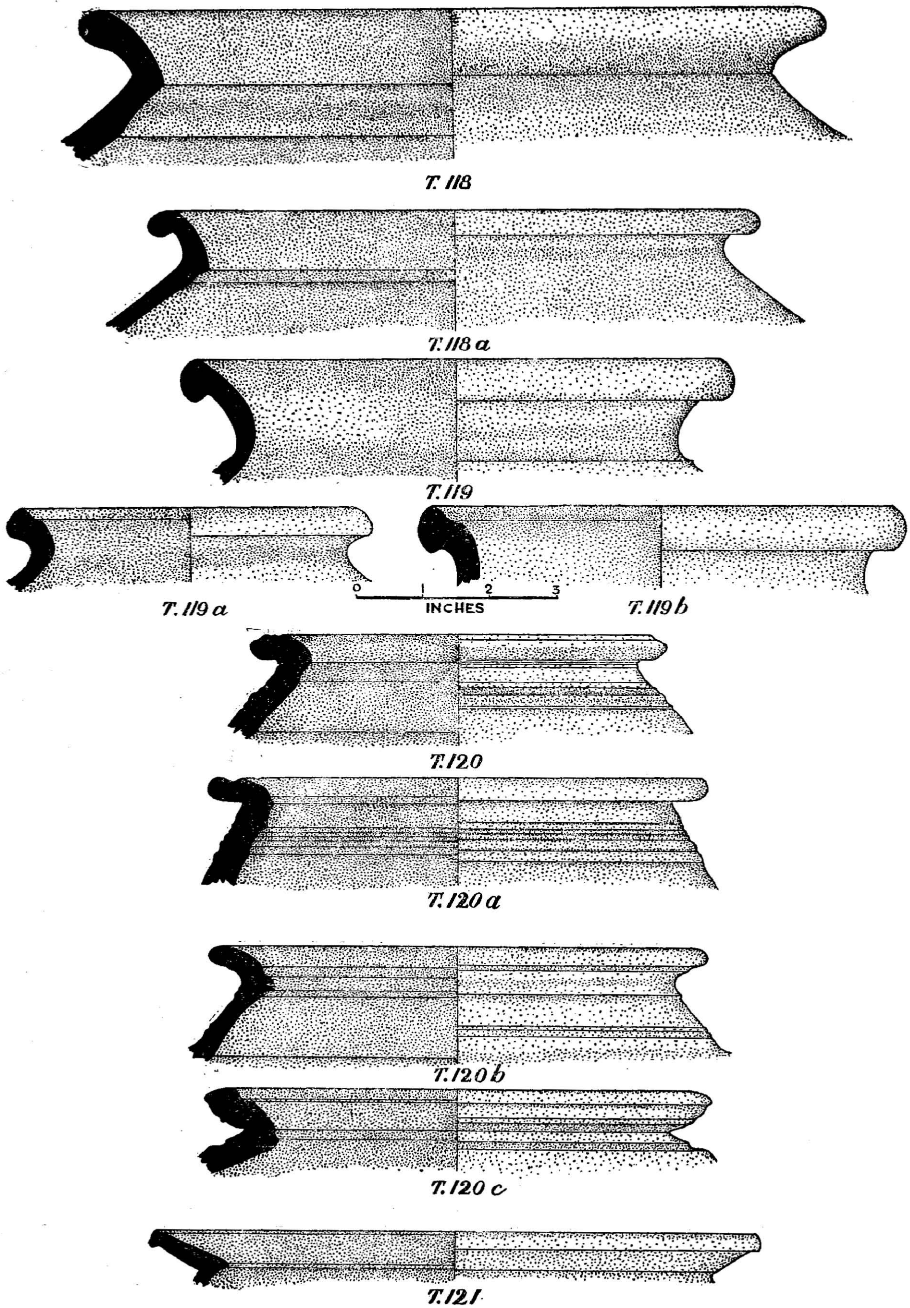


Fig. 39. Types 118-121. Ordinary Black ware. Short necked Vessels (Rims only). (See also Fig. 24. Type 40). Period IV.

(*See p. 79*)

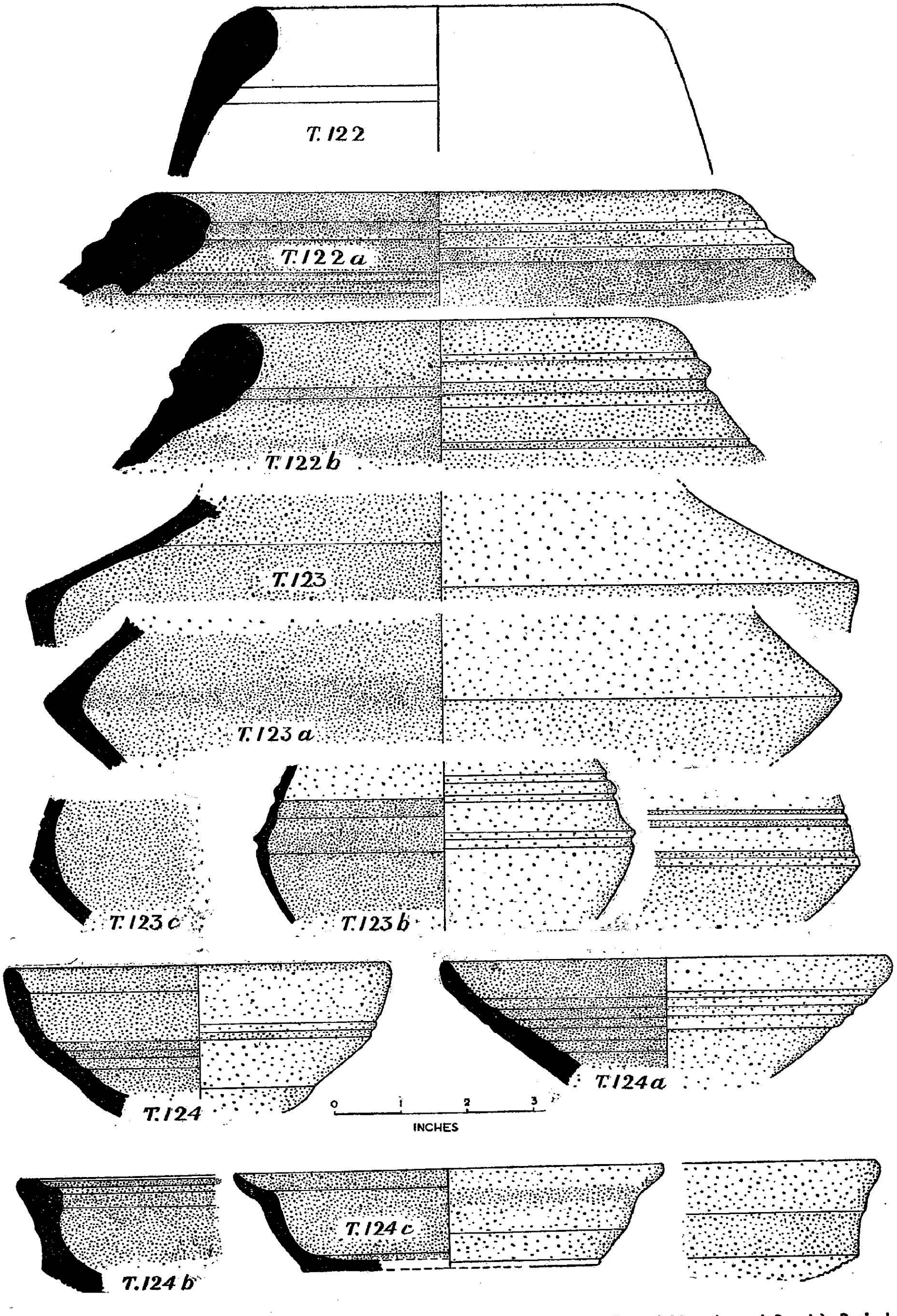


Fig. 40. Types 122-124c. Red and Ordinary Black Wares. (Storage Jars, Carinated Vessels and Bowls). Period IV.
(*See pp. 79-80*)

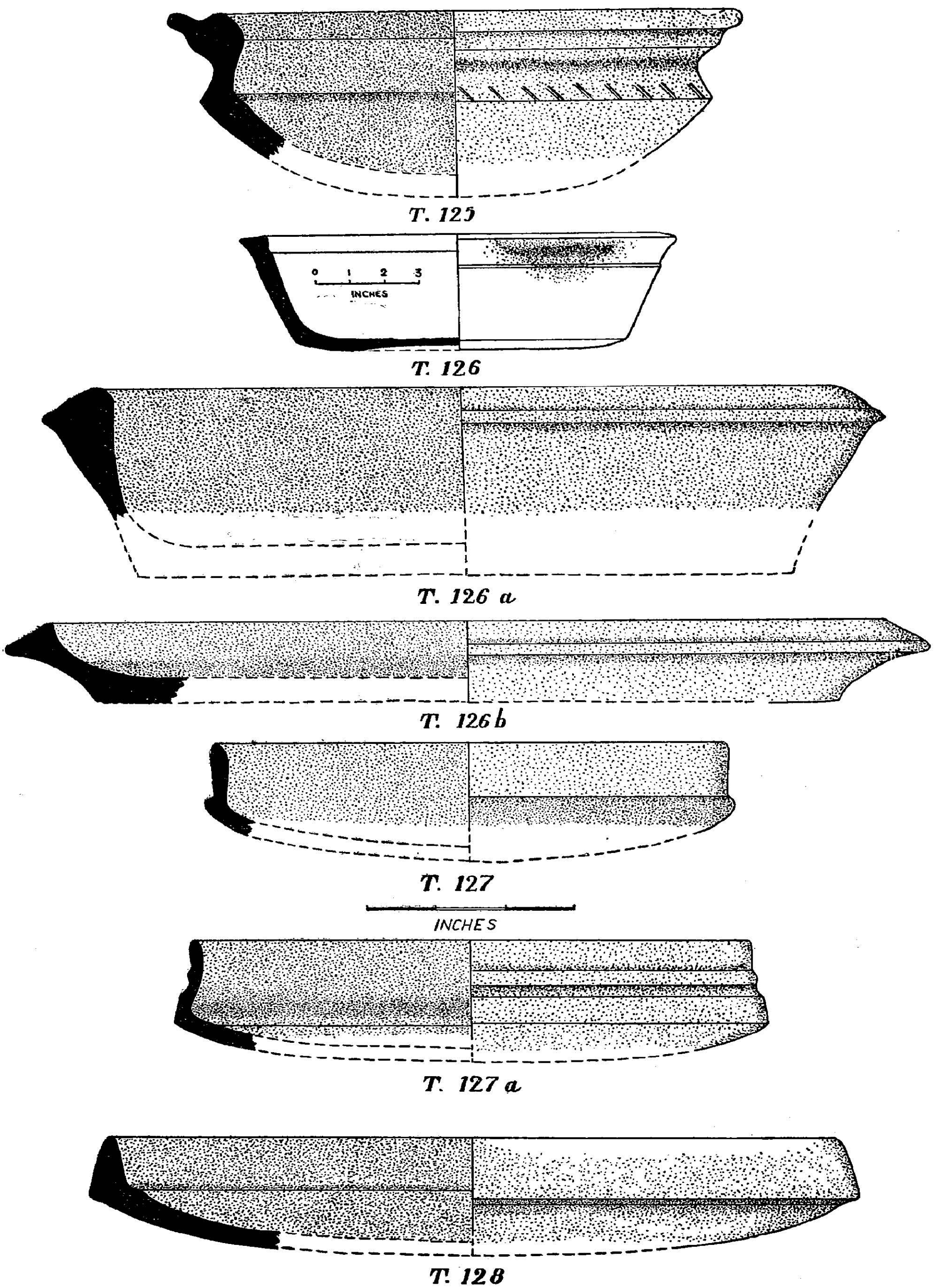


Fig. 41. Types 125-128. Carinated Bowls with a base. Miscellaneous.

(*See p. 80*)

Fig. 39. (118-121)

Types 118-119

118. Fragment of a large vessel with everted rim. Smooth outer surface. No. 2805, MG.N. C(3).

118a. Fragment, short rim, rim as in 2805a. No. 2805b, MG.N. A(3).

119. Fragment of externally beaded rim, short neck, smooth polished surfaces. No. 2805a, MG.N. (3).

Types 119a-119b

119a. Fragment, rim, everted, with a groove on its inner face. No. 2814, MG.N. D(1).

119b. Fragment rim, everted and cut, with a shallow groove on its inner face. No. 2864, MG.N. A(1).

Types 120-120c & 121

120. Fragment, rim, short neck with everted rim and two grooves on its flat top. No. 2808, MG.N. C(3).

120a. Fragment, short neck, everted rim with a groove on its flat top and four grooves on the shoulder. No. 2787, MG.N. A(1).

120b. Fragment, short neck, everted rim with a groove, carinated shoulder, crimson black surfaces. No. 2813, MG.N. D(1).

120c. Fragment, short neck, broad everted rim with two grooves on its inner face. MG.N. A(1).

121. Fragment, short, angular neck, without grooves. No. 2845, MG.N. B(2).

Fig. 40. (122-124c)

Type 122

122. This is a type again represented by a solitary sherd of a rim. The edge is thick, but pointed because of bevelling from inside and outside. Both surfaces were probably slipped, but the outside has a glossy, brownish appearance, while inside only the top of the edge has been made smooth. N. 2413a, MG.E.N. Ik(3).

Types 122a-b Rims of Storage Jars

No sherds of storage jars were found in Black Ware, except the two noticed here from MG.N. A(1) and MG.E.N.

122a. Fragment of a rim of a storage jar, having a thick raised band outside, round the neck, and deeply cut on the underside, below the rim. Very coarse surface. No. 8000, MG.N. A(1).

122b. Fragment of a rim, having a raised band outside, followed by a shallow groove, and narrow groove on the shoulder, plain inside. No. 8000e, MG.E.N. (2)

Types 123-123c

123. Fragment of a vessel with angular belly, coarse fabric. No. 2821, MG.N. E(1).

123a. Fragment of a vessel with angular belly. Incised notches on its upper side. Smooth outside, coarse inside. No. 1822, MG.N. (1)

123b. Fragment of a very thin walled vessel, having a round belly, but a series of raised concentric bands on the shoulder. For some reason the sherd has crimson colour-spots on it. No. 2812, MG.N. D(1).

123c. Small fragment of a carinated ware. It has three grooves on its upper part. The sherd is smooth black outside but coarse red inside. No. 1718, MG.N. G(1).

Types 124-124c

124. Fragment of a rimless bowl, with inturned side. Very coarse surfaces. No. 6327, MG.N. A(3).

124a. Fragment of a very shallow rimless bowl. Very coarse surfaces. No. 2257, MG.N. D(3).

124b. Fragment of a bowl with a slanting top flaring mouth and a carinated belly. Extremely coarse from outside, having granulated base. No. 2894, MG.N. C(3).

124c. Fragment, bowl having a flaring mouth, with slanting top. Impressed thumb or dot decoration round the belly, and a very coarse but ring-like base. No. 2785, MG.N. A(1).

Fig. 41. (125-128).

Types 125-128

125. Fragment, bowl with a lip, (made by drawing out the clay when wet, with the thumb and finger), having thick, coarse walls with a broad, deep groove, and carinated shoulder, bearing oblique incisions. A unique type at Nasik. No. 6912, MG.E.N. Ie(3).

126. Rimless, flower pot—(*Kuṇḍī*)-like vessel, with low, thick, out-going walls, and broad flat base. Coarse, dirty brown surface, base extremely rough. No. 2004a, MG.E.N. (2). [pl. XIII, 3].

126a. Fragment, probably of a similar vessel as T.126. No. 2004, MG.N. (2).

126b. Fragment of a very shallow, *Kuṇḍī*-like vessel, with flaring sides and a coarse base. No. 2868, MG.N. A(2).

127. Fragment of a rimless dish, with straight side, and rounded base. Smooth black surfaces. Perhaps the bottom was brownish. No. 2860, MG.N. A(2).

127a. Fragment of a dish, with straight sides, decorated with shallow grooves, rounded base. Smooth black surfaces. No. 2662, MG.N. (2).

128. Fragment of a dish, with incurved side, and rounded base, which is coarse black whereas the former is brown. No. 2794, MG.N. B(2).

Inscribed Sherds

A few sherds were found from the middle and the lower layers of the two large trenches MG.N. and MG.E.N., which bear Brāhmī-like symbols, and in some cases, definitely Brahmi-letters. Some of the symbols, like the *svastika*, taurine, and *ma*-like figure, occur on Early Cast Copper Coins, in caves with or without inscriptions, and other early monuments, particularly Buddhist and Jaina. The first two symbols, viz, the *svastika* and the taurine, figure in the Pandulena Caves, near Nasik. A study of *svastika* forms from there and elsewhere shows that the *svastika*

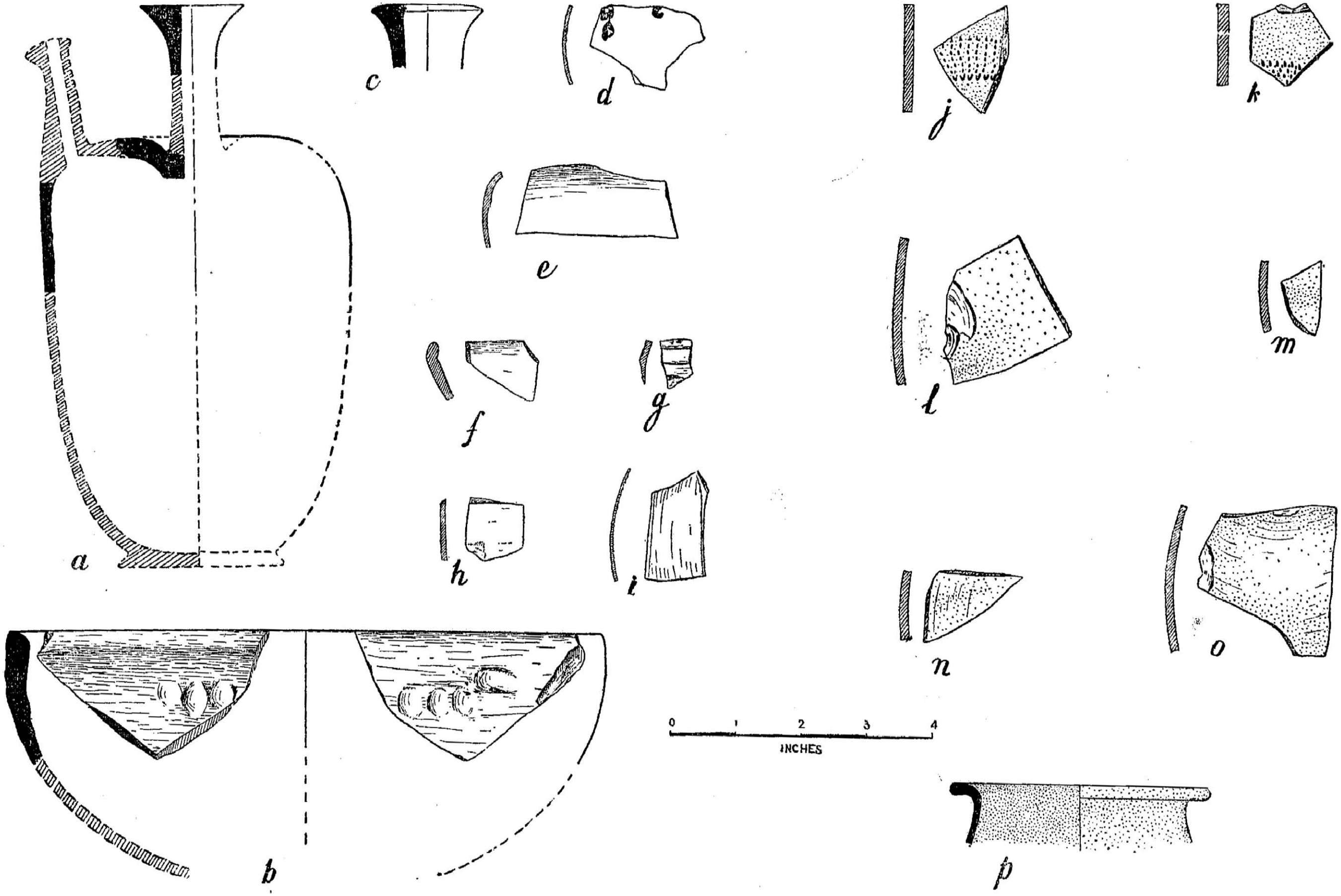


Fig. 42. Red Polished (a-i) and Black Rouletted (l-p) Ware. (Sherds).

(*See pp. 69-70*)

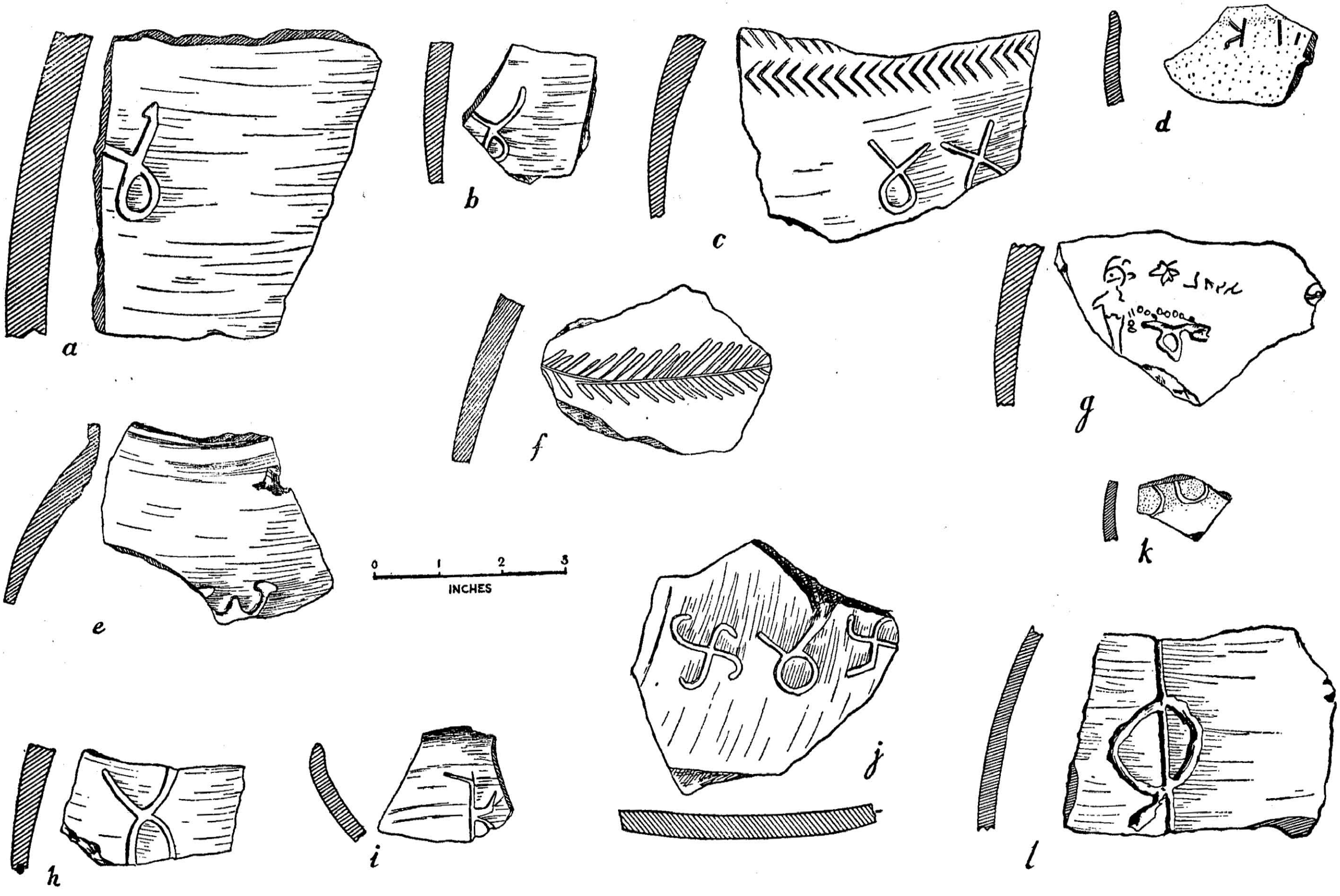
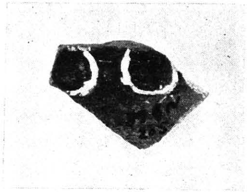


Fig. 43. Inscribed Sherds (a-l).

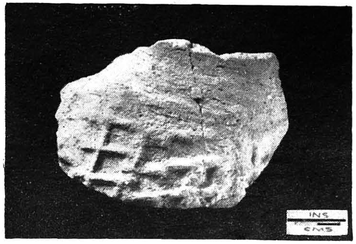
(See pp. 80-82)

1



2

3



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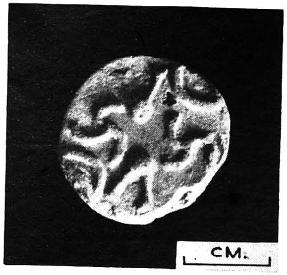
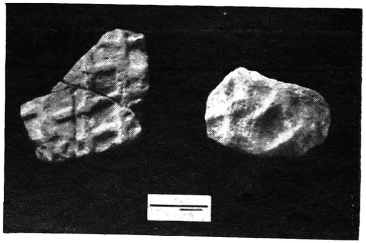


4



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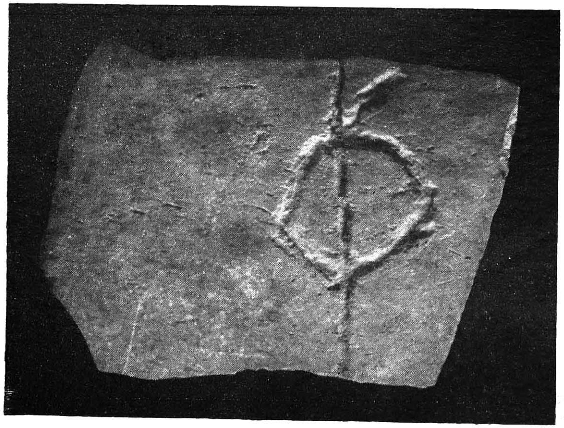

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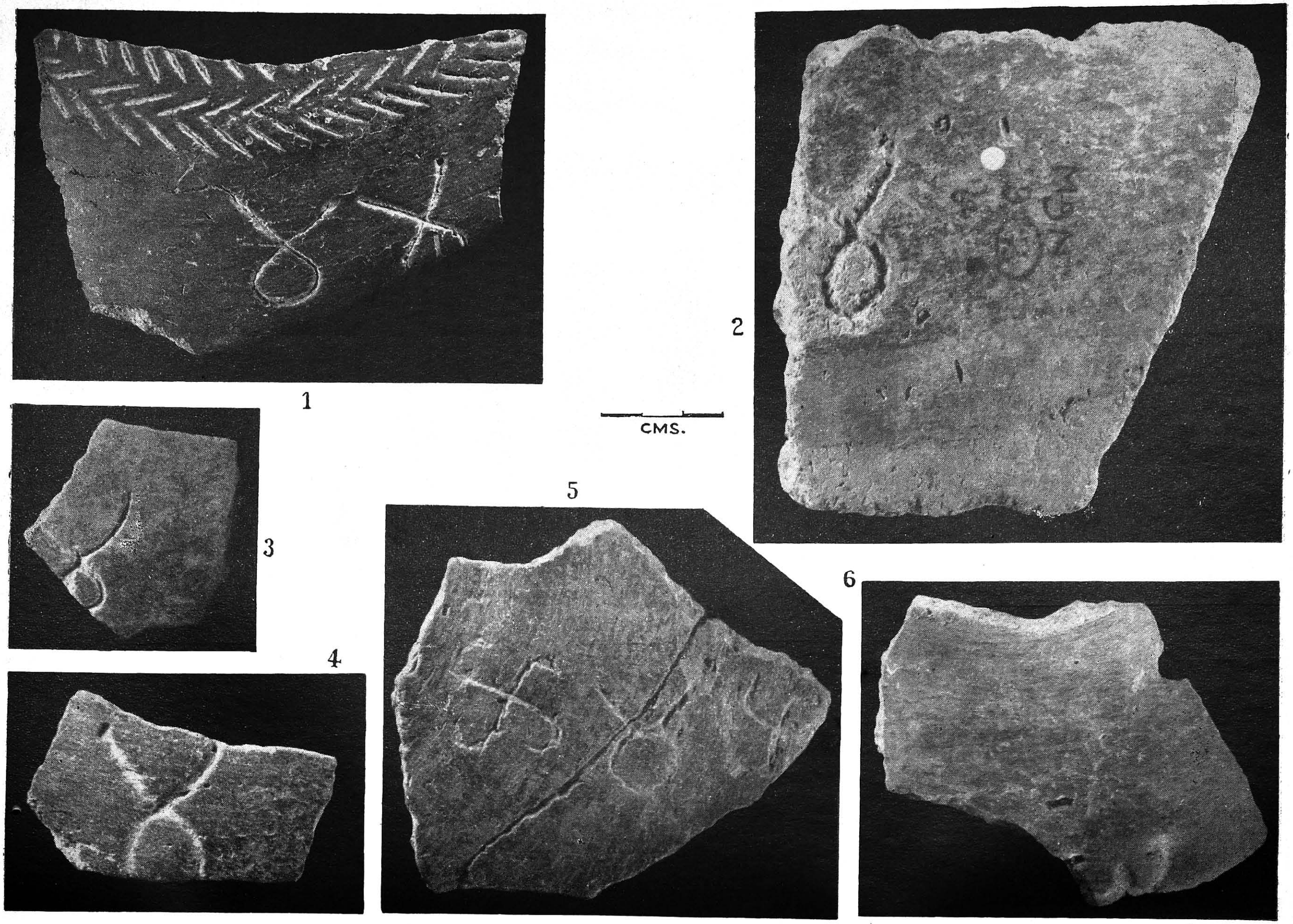
6

Inscribed (Nos. 1-3,5-6), and Stamped (Nos. 7-8) Sherds, and Terracotta sealing (No. 4). Period II-III. (*See pp. 81, 82, 83*)



Sherds with symbols (Nos. 1-6). Period II. (*See pp. 81-82*)

with curved arm, is a feature of the pre-Christian period. One may compare in this connection the *svastika* appearing at the end of inscription of King Kanha, (Cave 19)[1], (dated 2nd-1st Century B.C.) and those appearing later in inscriptions of Usavadāta and Pulumāvi. (Caves 10, 3)[2].

The same is true of the *ma*-like symbol.[3] It is definitely of the period before Christ. Later the lower loop of *ma* becomes angular.

The short Brahmi inscriptions on a few sherds are also in characters which can be dated between the 3rd century B.C. and 2nd-1st century B.C.

Thus from the evidence of symbols and Brahmi letters on potsherds the associated undisturbed layers may be put in a period from the 3rd-1st century B.C.

Fig. 43. (a-l)

Inscribed Sherds

(a) Fragment of a large, thick walled vessel, probably storage jar, having a red-slipped smooth exterior, and coarse, brown interior. The former has a well incised symbol ४. No. 6451c, MG.N. B(2). (See also Pl. XVII, 2).

(b) Fragment of a vessel, with smooth red exterior owing to fine red slip and smooth but dusty interior. The exterior has the symbol ४. No. 693, MG.S.N.(2).

(c) Fragment of a large globular vessel, red ware, having a coarse interior, but a smooth exterior, with remains of two rows of incised V-decoration, probably round the shoulder, and two symbols ४ ४. No. 6451a, MG.N. B(3). (See also Pl. XVII, 1).

(d) Fragment of a rimless vessel, smooth black outside and inside. Remains of three Brahmi letters as follows :—

(*A* or *ta ra* ..?) or if we have it upside down then .. *ra ta*. No. 2029, MG.N. G(3). These letters show the characteristics at least of the pre-Christian Brahmi[4] *A*, *ta*, *ra*. Hence the sherd may be of the 1st century B.C. (See also Pl. XVI, 1).

(e) Fragment of the shoulder of a globular vessel, with bright red, smooth exterior owing to the application of fine slip, coarse, dusty interior. The exterior has the remnants of the Buddhist symbol *ω* . No. 6451, MG.E.N. Ie(4).

(f) Fragment of a thick-sided vessel with smooth red-slipped surface, having an incised palm-leaf-like design, perhaps round the shoulder of the vessel. On the inside the surface is extremely coarse and dusty in colour. No. 6249, MG.N. (3).

(g) Fragment of a vessel, dusty brown inside, polished red outside, owing to reddish slip and polishing. The exterior surface has a number of engravings. Among these,

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1. *E.I.*, VIII, p. 93, No. 22. cf. BURGESS, *Archaeological Survey of Western India*, (1882), IV, p. 40; pl. LI, Insc. No. 1.

2. *Ibid.*, pp. 60, 65, 73, 78.

3. Cf. also SIRCAR, Dines Chandra, *Select Inscriptions bearing on Indian History and Civilization*, Vol. I (Calcutta, 1942), p. 183.

4. Cf. BÜHLER, *Indischen Palaeographie*, Tafeln, (Strassburg, 1896), Tafel II.

that on the extreme left seems to be a human figure. Since it is incised after firing, it may be regarded as a graffiti. Then there is some leaf or butterfly-like figure, and to its right an inscription. It reads " *Ni ga da* (*or la*) *sa* " "of Nigada (or la)."[1] The characters seem to belong to the 1st-2nd century B.C. Below a badly incised Brahmi '*ma*' like symbol, and some dots. No. 830, MG.N. D(3). (See also Pl. XVI, 6).

(h) Small fragment of a vessel having smooth crimson exterior, and dusty interior. Symbol on the exterior as in 4651a. No. 6451b, MG.E.N. Ie(4).

(i) Fragment of a shallow dish, coarse brown exterior and interior, on the outside or the underside, if held with the base of the vessel on the top, the letter ⋊_. But if held in the reverse fashion, then K. The former is more probable, and the letter may be Brahmi A.[2] It is deeply incised. No. 172, MG.N. A(4).

(j) Fragment of a vessel, coarse, dusty brown inside, smooth red outside because of fine red slip, and bearing the symbols 卐 8 卐. Similar symbols occur on Cast Uninscribed and Inscribed Copper Coins, and in early Buddhist Caves. No. 848, MG.N. E(5).

(k) Fragment of a black-and-red ware with extremely smooth, polished surfaces. The outside has the remains of letters (or symbols o o, probably, remains of a Brahmi '*ma*' of the early type or, if intact, the letters *tha*. The former is more probable. No. 205, MG.N. B(5). (See also Pl. XVI, 2).

(l) Fragment of a vessel with smooth red exterior and very coarse brownish interior. The former has a well incised circle, with a loop at the bottom turned towards the left (or if turned upside down, the loop will turn to the right). This circle is cut by a deep vertical line, though not in two equal halves. If a Brahmi letter, it would read '*chu*.'[3] No. 4614, MG.N. C(5). (See also Pl. XVI, 5).

Inscribed Sealing

Terracotta

A round plano-convex sealing (No. 672) was found from MG.S.N., layer 2. It is made of brownish clay and imperfectly fired. The letters '*dha ma sa*' ("of religion") are inscribed twice from left to right and right to left in such a way that it will read, if half of the seal is impressed first, and then the second half, as *dha ma sa, dha ma sa*. Or if the whole is impressed at a time, then one may read *dha ma sa* either way. [Pl. XVI, 4]

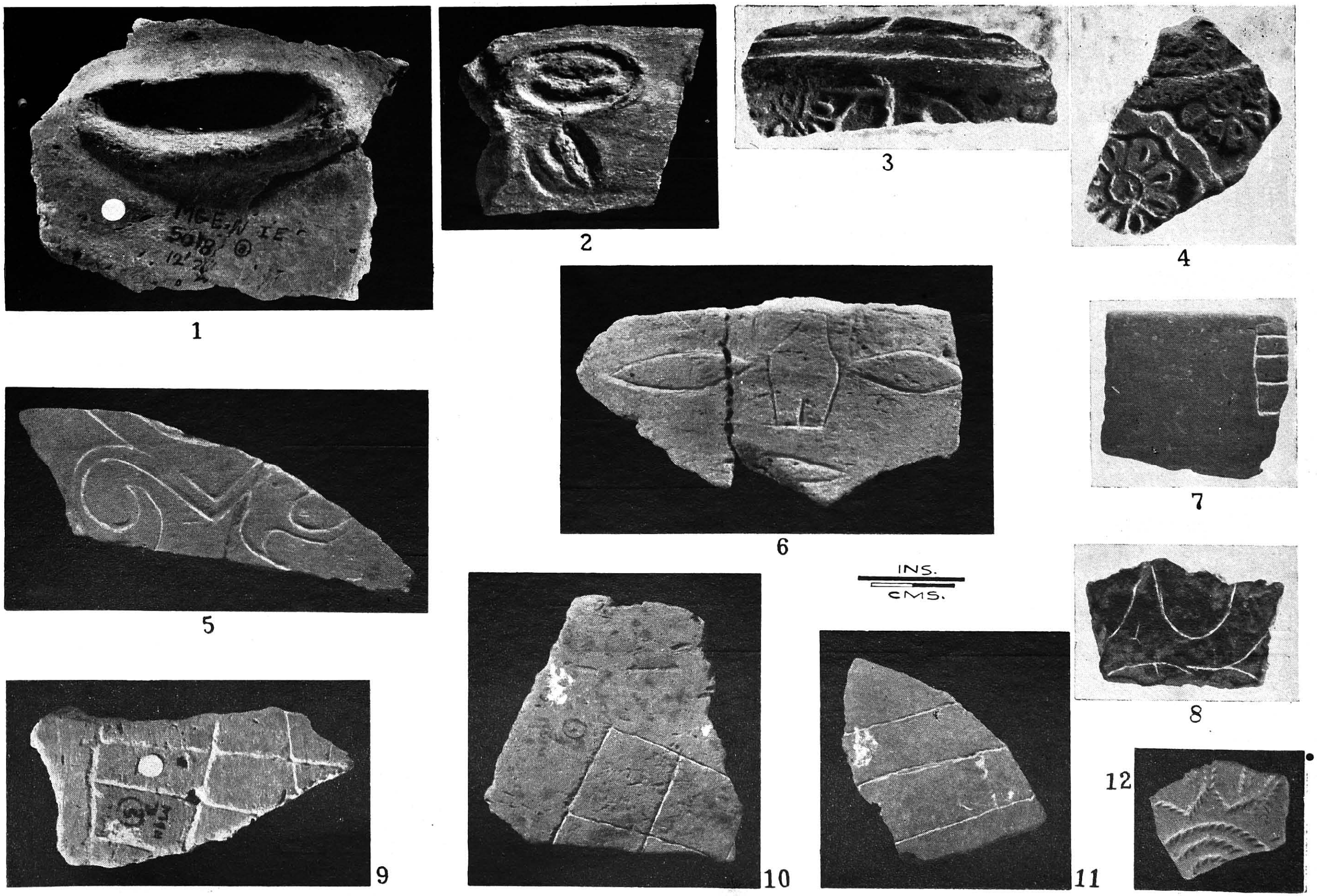
Since the *ma* has become angular and as the *sa* has well developed loops, palaeographically, this sealing may be placed in the 1st-2nd century after Christ.

Shri Lakshminarayan Rao, Superintendent for Epigraphy, however, says as follows :
" The characters of the seal appear to be later and may be referred to the 1st century A.C. I am not sure of the *dha* on the seal. If the symbol, occurring twice, which is read as *dha* is left out, the inscription seems to read *Sēma Sēma* or *Sama Sama*. Sama is one of the 1000 names of Vishnu ".

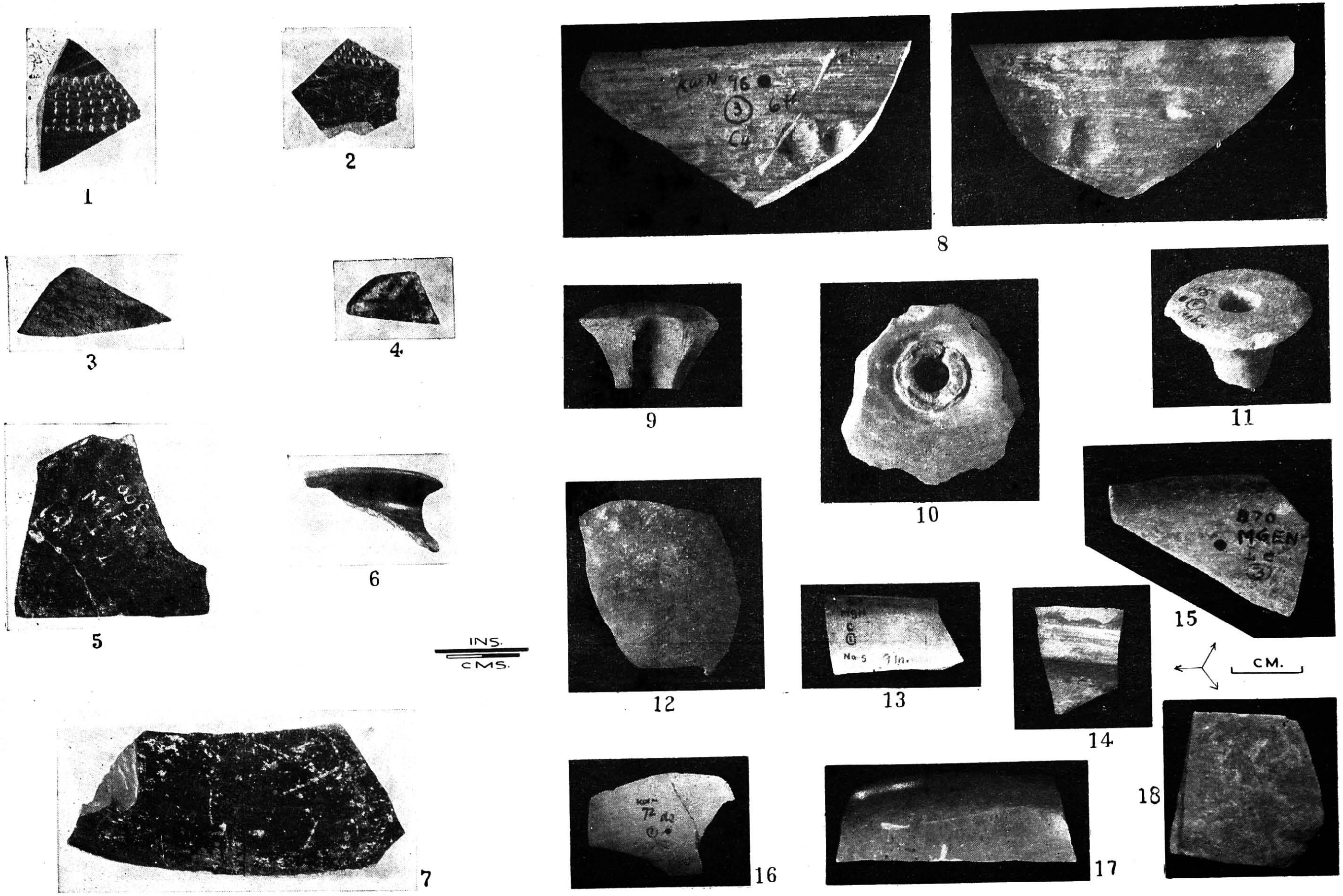
---

1. We are indebted to Dr. Chhabra and Shri Lakshminarayan Rao for help in reading the inscription.
2. Bühler, *op. cit.*, Tafel II, Column XXI (from Hāthigumphā).
3. *Ibid.* Column X (from Girnār).

PLATE XVIII



Decorated Sherds: Embossed (1-4), Incised (5-12). Period II-III. (*See pp. 83-84*)



Rouletted (1-7) and Red Polished Ware (8-18). Period III.

(*See pp. 69-70*)

I am not sure, but to me it appears that the symbol which you read as *dha* is only a representative of the moon, and the two letters may have to be read as *soma*. Both the moon-symbol and the word *soma* occur twice. *Soma*, as you know, means ' moon '. The whole may have some magic import !"

I had occasion to show this seal to Dr. H. V. TRIVEDI, Curator and Assistant Director of Archaelogy, Madhya Bharat. He also, independently read it as I have done. It appears to me that Shri Lakshminarayan RAO's reading is farfetched.

DECORATED SHERDS (Fig. 44, a-m)

(a) Fragment of a thick walled vessel, coarse, brown outside, but inside it was originally polished black and ornamented with an incised design. No. 883, MG.E.N. [pl. XVIII, 8].

(b) Fragment of the middle portion of a cylindrical vessel having a thin reddish slip outside, but coarse dirty brown inside. On the outside are incised two elongated, lotus-bud-like eyes, the tip of the nose with nostrils, and mouth. No. 775, MG.N. D(4). Period IIB. [pl. XVIII, 6].

(c) Fragment of a vessel with thick walls, having polished light red-slipped exterior and smooth tannish interior. The outside has an incised decoration of which volutes and part of a straight line are now extant. No. 5018d, MG.E.N. (4). Period II-III. [pl. XVIII, 5].

(d) Fragment of a thick-sided vessel with bright red slipped surface decorated by incised lines forming irregular rectangles. The underside has no slip and is coarse and dull brown in appearance. No. 6248, MG.N. D(3). Period IV. [pl. XVIII, 9].

(e) Fragment of dish, having smooth black surfaces. The outer has remains of an incised square or rectangle which was further subdivided into smaller squares or rectangles. No. 5125c, MG.N. A(4). Period IIB. [pl. XVIII, 7].

(f) Fragment of a vessel with medium thick wall having a fine red slip over an orange coloured surface which shows a series of close horizontal striations. Further decorated by three horizontal incised lines and one vertical. No. 5008, MG.E.N. Ie (3). [Cf. No. 6248, MG.N.(3)]. [pl. XVIII, 11].

(g) Fragment of a coarse, thin, pale red vessel, with a decoration of small, oblique, incised strokes. The latter seems to consist of at least three (central) concentric circles surrounded by a circle of broad V-shaped petals (?) containing two vertically incised lines (?). No. 7012, MG.S.N. (2) [pl. XVIII, 12].

(h) A similar sherd No. 5018c from MG.E.N. has identical decoration showing one full rosette with 9 petals, and one half, separated by a line, consisting of one round and oblong bead-like object. No. 5018c, MG.E.N. Ie(3). [pl. XVIII, 4].

(i) Fragment of a vessel having thick sides, polished (or burnished) black surface decorated with raised band, and impressions of half-rosettes of five petals. The inner side is very coarse and uneven. No. 5018b, MG.N. E(5). Period IIA. [pl. XVIII, 3].

(j) Fragment of the lid of a Kaolin Ware. It is concave from inside and on the outside has a raised decoration. This had two concentric rings, one on the lower periphery of the circumference, ornamented with leaves and buds, and the other above it. This has now extant the lower part of an elephant's bent leg. No. 3, MG.N. A (1). Though almost from the surface, the sherd seems to be of the early period when such decorated vessels were common. [pl. XXIV, 5].

(k) Small fragment of a lid of Kaolin, extremely well fired. The upper surface is smooth owing to polish, and has remains of fine narrow grooves. The underside is also smooth, and exhibits a part of the inner ledge of the lid. No. 206, MG.N. C(5). Period II A. [pl. XXIV, 4].

(l) Fragment of a vessel, having smaller ovals and smaller eye-ball-like impression within it. No. 5018a. Unstratified. [pl. XVIII, 2].

(m) Fragment of a very thick walled vessel, having a coarse red slipped surface and very coarse blackish inner surface. The former has a raised decoration with a deep elongated oval, eye-like depression. No. 5018, MG.E.N. Ie(3). [pl. XVIII, 1].

No. 488 Small sherd of an ordinary blackish red vessel, having a coarse surface and very coarse, light brown, unslipped interior. This is held by an iron clamp, pinned with a copper (bronze) pin. MG.N. (4). 7 ft. 8 in. Why such an ordinary coarse vessel should receive this treatment or be prized cannot be understood. [pl. XXVI, 9].

Specialized Wares [Figs 8a, 37 and pl. XIV]

No.8002 Only fragment of a vessel with a short everted neck, Cf. T. 9 in Red Ware, MG.N. (4). The surfaces are coarse, but covered with mica. MG.E.N. Ik (3). (Fig. 37 T. 108a).

No.6600 Upper half of a vessel, red ware, having a small beaded rim, with an arrow-like (graffiti) on the shoulder. MG.S.N. (Fig. 8a, 1).

No.6585 Remains of a globular vessel, tan ware, having extremely polished, thin, egg-shell-like walls. Partly reconstructed. No. 6585. MG.N. E(5). well. (Fig. 8a, 2).

No. 183 A vessel, probably imitating a complete coconut shell in shape as well as in its external surface which is roughly incised. It has a narrow bottle-like, or *Kujah-like* neck, smooth dark tan in colour, and probably handmade. MG.N. C(4). [pl. XIV, 3]. Fig. 8a, 3.

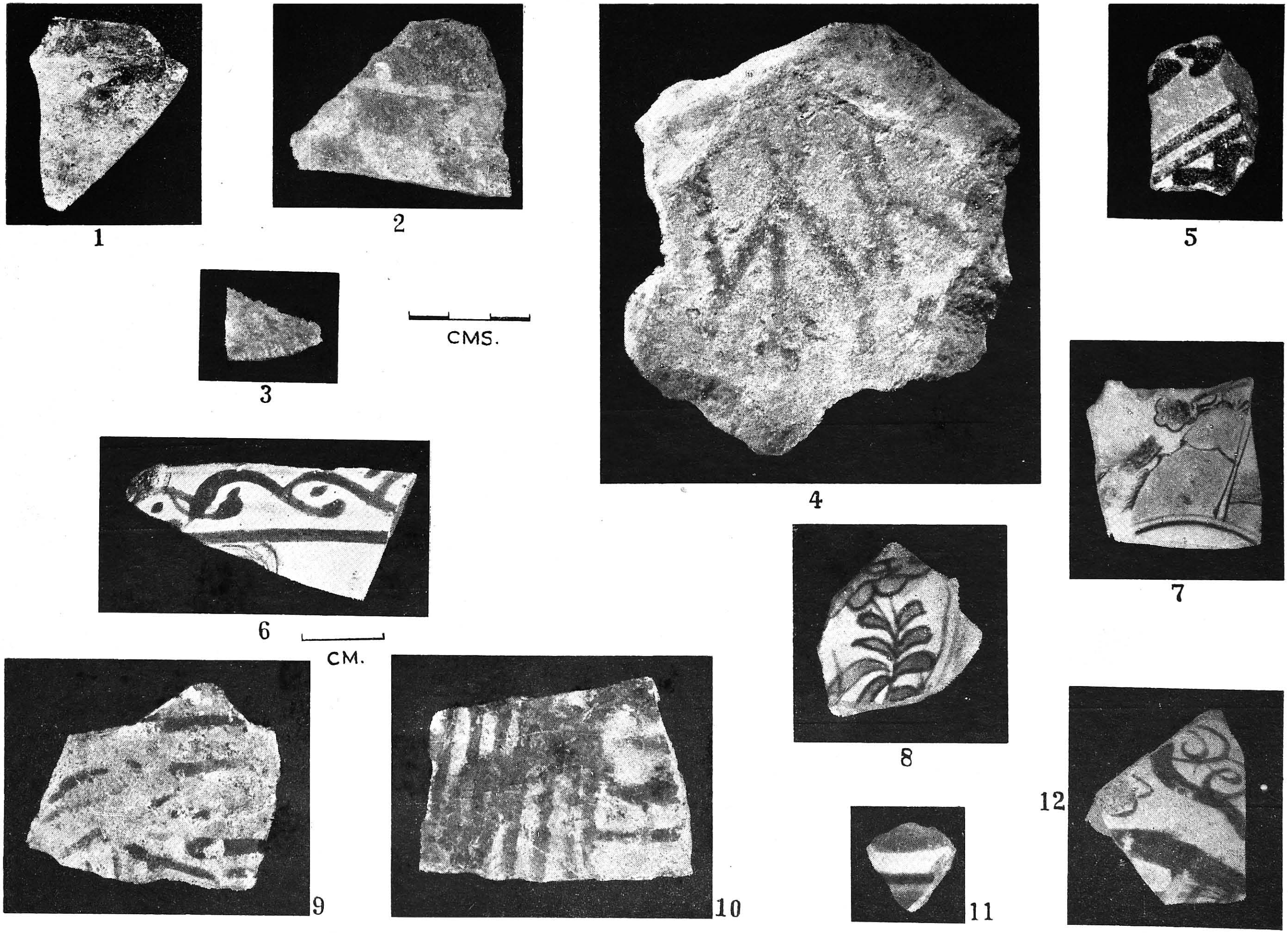
No.5065 Remains of a globular part of a multi-spouted vessel. Coarse red ware. It appears that the spouts were prepared separately and affixed on to the pot. A hole was then bored in the pot from the underside to connect both the surfaces. MG.E.N.(2) [pl. XIV, 1].

Painted Pottery, Periods II-IV. [pl. XX]

Only seven sherds of painted ware were found from the middle and lower layers belonging to Periods II-IV respectively. Of these, two came from MG.N. (5), two from MG.N. (4), one from MG.N.N. (2), and two from K.W.N. (1) and (X3). Excepting two, one from MG.N. (5), and the other from K.W.N. (1), there is no resemblance between others, and we cannot speak of the Painted Pottery of Period II or Period III-IV. The sherds seem to be intrusions and are not suggestive of a local Painted Pottery Culture. This is particularly true of the two painted sherds from MG.N. (4). These remind one of the Andhra Painted ware from Brahmagiri and Chandravalli[1] and other sites in Karnatak. Because of its association with the rouletted ware, it is dated to the 1st century A.D.[2] We may, therefore, keep the lower limit

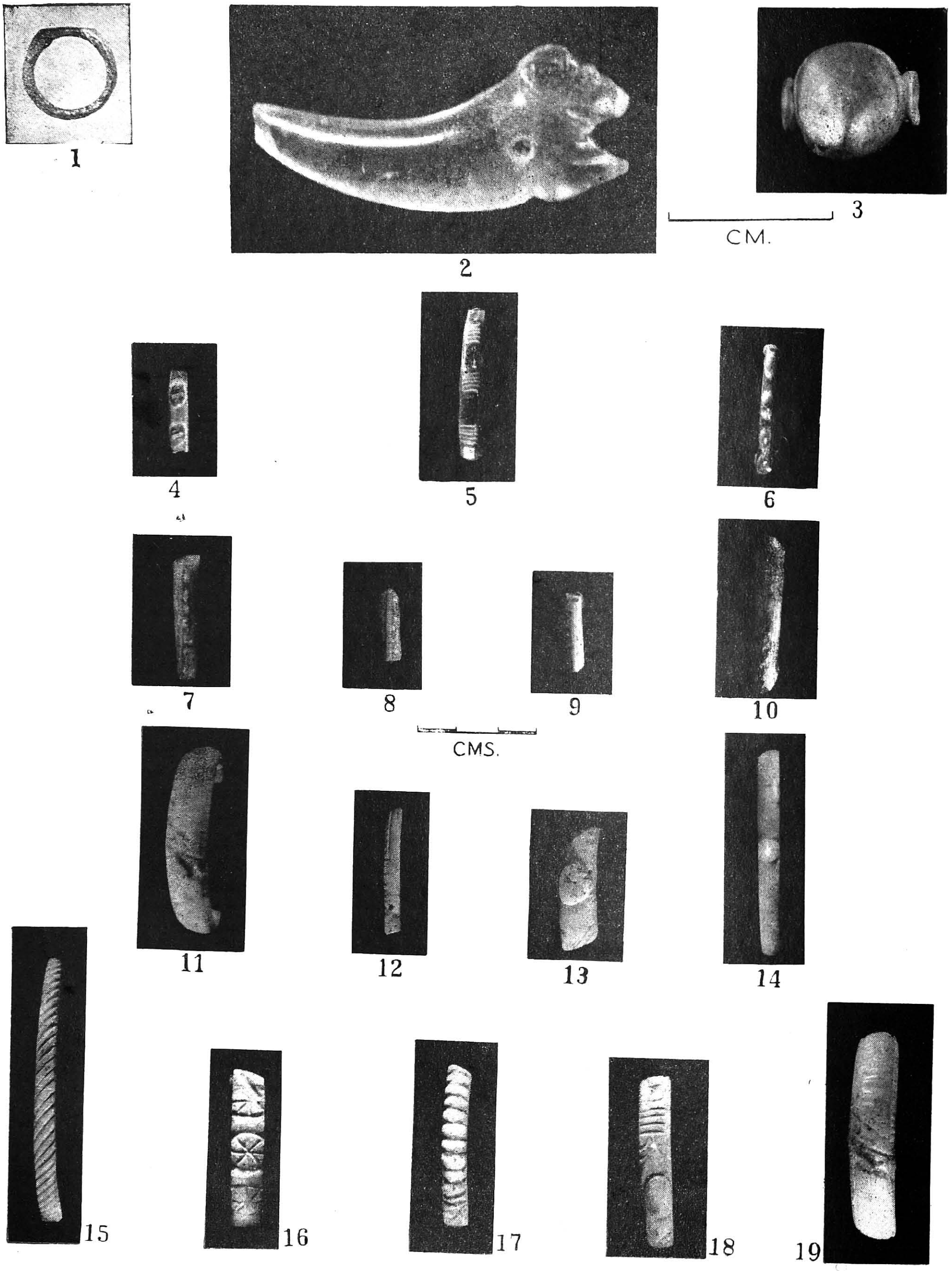
1. *Anc. Ind.*, No. 4.
2. *Ibid.*, p. 236.

PLATE XX



Painted (Nos. 1-3, 6, 9-10), Glazed (4-5) and Celadon (7, 8, 11-12) Ware, Period III-IV. (*See pp. 85-86*)

PLATE XXI



Copper ring (1), Crystal Pendent (Lion) (2), Gold bead (3), Glass bangles (4-10), Conch-shell bangles (11-19).

(*See pp. 96-98*)

of Period IIB, (layer 4) as this, and assign the period to three centuries, 1st century A.D.—1st-2nd century B.C.

Painted Sherds, Period IIA

Only two fragments of painted ware were recovered from 'ayer 5 and one from layer 4. The first is of a small high-necked globular vessel. The rim is not very high; it is slightly flaring. Below it and the shoulder there is a raised band. Inside, traces of three corrugations remain on the globular portion. The fabric is of coarse, gritty clay and not well fired, the rim portion and parts of shoulder are greyish, while the rest is dull brown. Probably a white paint originally covered the entire vessel, but there are patches of black over the globular portion. Before putting on this paint, a thick band either of clay or the paint was put on either side or four sides of the vessel, dividing the surface into four equal zones. Superficially, this looks as if the pot was made into halves. No. 2 and 4. MG.N. C(5). From the well. [Fig. 8a, 4].

No. 239. Fragment of a semi-thick-walled vessel, having a coarse, uneven, dusty, brown interior and a smooth polished self-covered slip, painted with strokes of a darker chocolate shade. The clay is gritty, full of sand, and the uneven inner surface suggests that it might be hand-made. MG.N. A(5). [pl XX, 9].

Period IIB

No 674. Fragment of a thin walled vessel, having a greyish, coarse, uneven interior, and a finely polished glossy reddish yellow exterior, due to the application of a reddish slip over the red, well burnt exterior. This seems to have been further painted with yellow oblique strokes as in Andhra pottery from Karnatak and Mysore. MG.N. E(4). [pl. XX, 3].

No.674a. Fragment, similar sherd. MG.N. E(4). Not illustrated (Cf. *Anc. Ind.*, No. 4, p.236ff).

No. 715. Fragment, probably rim portion of the lid, of a fine red ware, made of a well levigated clay (Kaoline ?) and uniformly baked. Over this there is a thick coating of white paint, further painted over by dark red and light orange bands. The orange bands enclose a beautiful scroll pattern (or duck or swan or serpent head, and dots). MG.N.N. (2). From the debris over the Early Brick Structure. [pl. XX, 6]. (Cf. Similar designs in Ajanta Paintings).

No. 97. Fragment of a vessel of semi-thick walls, having a dusty, brown interior, and a smooth, polished exterior, perhaps having a self-covered slip. Over this are painted in darker chocolate shade vertical and horizontal lines. The clay is gritty and full of micacious sand. Though the surface is flat, there are no wheel marks. The fabric and painting resemble most closely sherd No. 239 from MG.N.(5). Hence probably it belongs to Period IIA. K.W.N. (1). [pl. XX, 10].

No. 81. Fragment of a vessel of semi-thick walls, having a coarse red interior covered by a white substance The surface has a bright red slip. This has a thin horizontal applique band in white, patches of the same substance as that which covers the interior. K.W.N. (X3). Probably of Period IIA. [pl. XX, 2].

No. 887. Fragment, the base of the neck of an extremely thin walled (2 mm. thick) vessel having a fine burnished chocolate coloured surface. Round the neck and just below it there are traces respectively of thin and thick oblique black bands. On the inner side the surface is of dark chocolate hue with close grooves indicating that the vessel was made on a fast wheel. No. 887, MG.E.N. Ie(3). [pl. XX, 1].

PERIOD IV

GLAZED AND CHINESE (OR CELADON) WARE

A few sherds of Glazed and Chinese (Celadon) ware were found from the upper layers of MG.N. and MG.E.N., and thus naturally belong to Period IV. In the absence of coins, these sherds help in assigning the later sub-phases or this period to the Early Muslim contact with Nasik.

Celadon Ware

In the Celadon ware [pl. XX, 7, 8, 11, 12] there seem to be three main types, as distinguished by colour decorations.

(a) Decoration in navy blue over an azure or light greenish blue surfaces.
No. 6201a. [pl. XX, 8].
No. 6201. MG.N. C(1). Not illustrated.
No. 5039. MG.E.N. (1). Not illustrated.

(b) Decoration in blue as in (a) over the upper surface, the under surface being of chocolate colour.
No. 6062. MG.N. A(1). Not illustrated.

(c) Paintings in green, chocolate or blue over a whitish surface.
No. 6191. MG.N. C(1). [pl.XX, 7].
No. 863. MG.E.N. (1). [pl. XX, 12].
No. 6197. MG.N. C(1). This has probably a Chinese letter on one surface.

The paintings seem to include plants, flowers and fruits (?).

The pottery shapes represented are bowls or dishes with a ringed base, and a thin plate with a wavy surface and outline.

Glazed Ware

Of this ware, three sherds were found in MG.N., one in MG.S.N., and three in MG.E.N. The glaze is wearing off in almost all cases. It consists of a yellowish white surface, with paintings in light or dark blue or at time fine lustrous smooth green over a sandy surface. [pl. XX, 4, 5, 11]. The paintings seem to contain geometric and bird motifs, whereas the sherds are of ringed bowls and dishes.

VII

BEADS

The yield of beads at Nasik was not much. In all, 160 beads were found in various trenches as follows :

MGN. 138, MG.E.N. 7, MG.S.N. *Nil*, MG.N.N. 1, K.W.N. 5 and unstratified or unnumbered 9.

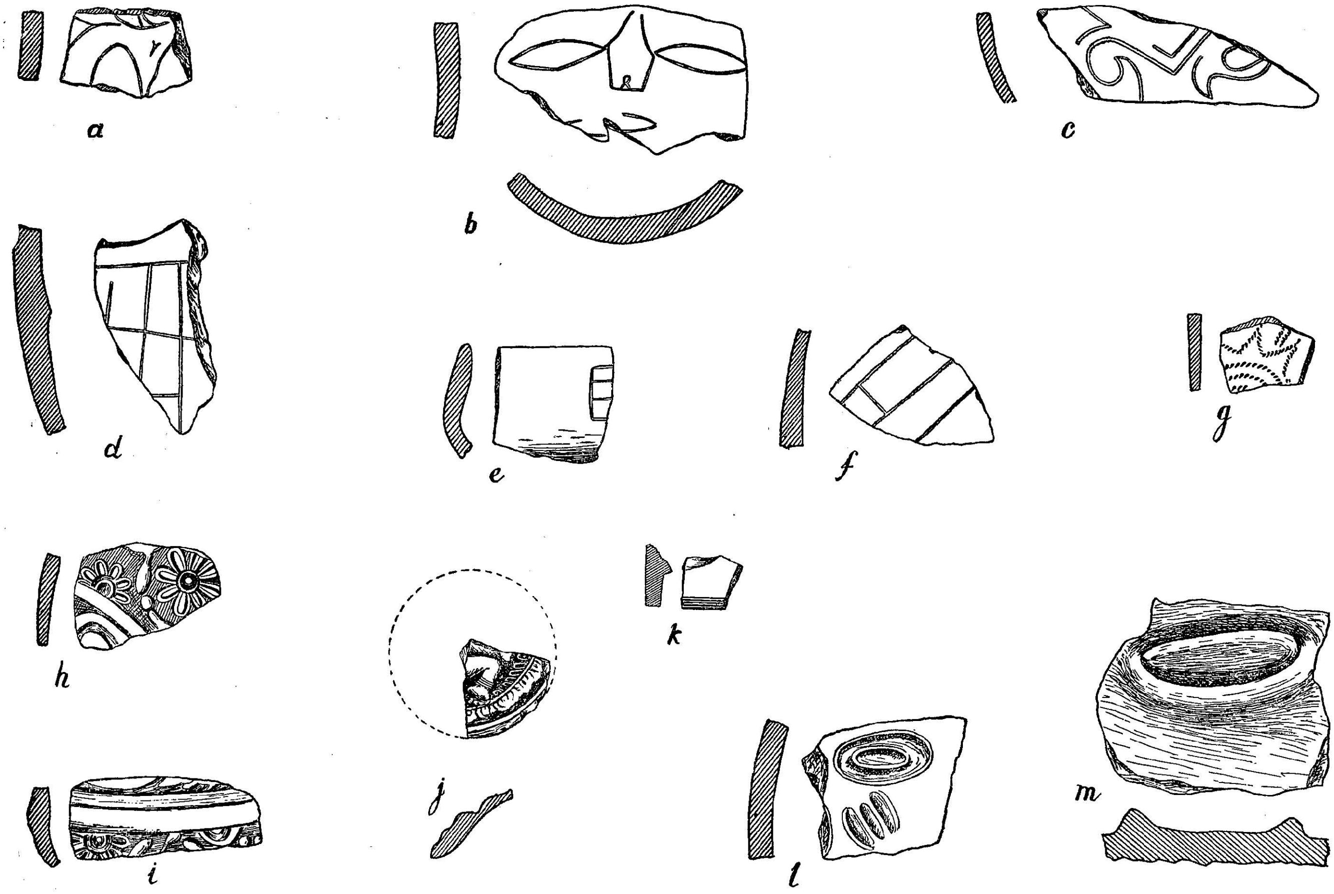


Fig. 44. Decorated Sherds: Incised (a-g and k); Embossed (h, i-m).

(*See pp. 83-84*)

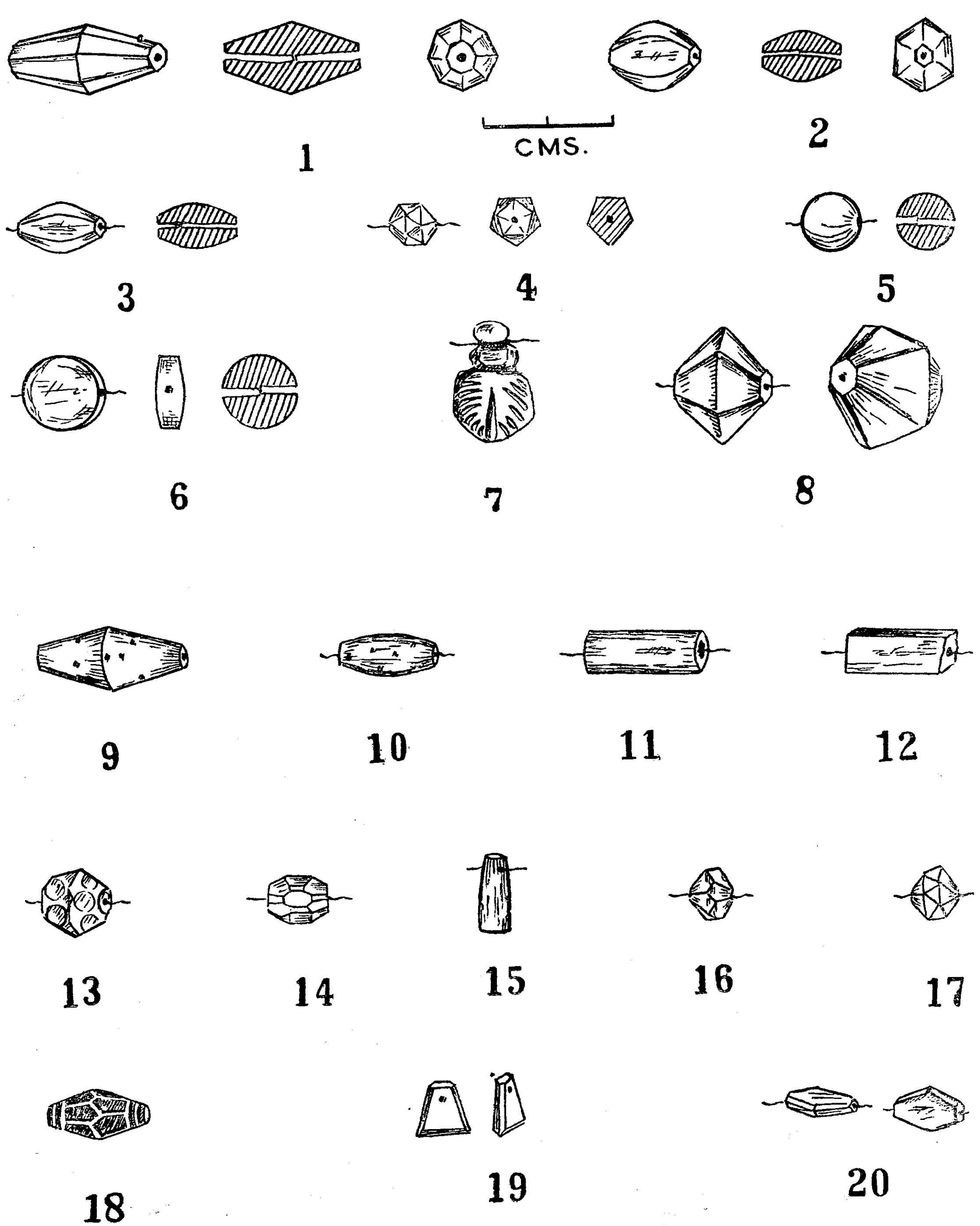


Fig. 45. Beads (Crystal, Blood-Stone, Lapis lazuli and Carnelian).

(See pp. 87, 88, 90)

Out of these, 53.1% are made of terracotta. Next to it come crystal and then jasper. Other materials alphabetically arranged, are the following:

Agate 1, Amethyst 1, Bloodstone 2, Bone 8, Carnelian 6, Crystal 15, Glass 7, Gold 1, Jasper 9, Lapis Lazuli 2, Opal 3, Quartz 8, Shell 5, Soapstone 1 and Terracotta 85.

Agate

Only one bead of this material was found.

Fig. 46, No. 3. This is of a short cylinder shape with milky white band in the centre, translucent grey-brown at one end and transparent at the other. No. 5182, MG.N. D(5). Period IIA.

Amethyst

A single specimen was recovered.

Fig. 46, No. 6. Of a roughly ovoid shape, slightly worn out, one end more purple than the other. No. 215, MG.N. G(5). Period IIA.

Bloodstone

Two beads were found in layer (5).

Fig. 45, No. 9. This is a finely polished truncated biconical bead of blackish-olive-green colour with several bright blood-red and a couple of greyish white dots. No. 796, MG.N. E(5). Period IIA.

No. 10. Barrel-shaped and comparatively worn out. No. 842, MG.N. C(5). Period IIA.

Bone

Among the eight bone beads, five came from MG.N. Of these, four are of special interest as they were found in a group and are well preserved. All of these [Nos. 683-86] are of a collared barrel-shaped variety with incisions that leave a rope design in relief. They can be ascribed to Period II A [Fig. 46, No. 4].

Besides these, two globular [Nos. 102 and 1000 : both of Period III-IV] and one unfinished bead of a cylindrical shape [No. 448, Period IV] were found.

Carnelian

Six carnelian beads were found out of which one was unstratified and one etched. The last as well as three others came from layer (5), and one from (4).

Fig. 45, No. 19. This is a fine, smooth, tabular triangular pendent of deep red carnelian with the perforation near the truncated top, slightly worn out on one face. No. 804, MG.N. E(5). Period IIA.

No. 20. A deep red lenticular diamond-shaped bead, with polished surfaces, two lengthwise perforations and a white dot near one end. No. 675, MG.N. E (4). Period IIB.

The other varieties are a truncated bicone [No. 184, Period IIA], a hexagonal bicone [No. 589, Period IIA], and a short truncated barrel [No. 697, unstratified]

The etched carnelian bead was also found from the layer of Period IIA.

No. 18. A deep, orange-red coloured bead of truncated biconical shape, with the white etching wiped out in some parts. No. 622, MG.N. D(5). Period IIA.

Crystal

Fifteen crystal beads were recovered, eleven out of which came from the fifth layer.

These beads are outstanding for their polish and shapes. Truncated bicone, twisted pentagon and hexagons are the favourite shapes. In some cases, the polishing makes the bead unique, as in the case of No. 811.

Fig. 45, No. 1. A hexagonal biconical bead of transparent crystal with double perforation and excellent polish. No. 811, MG.N. D(5). Period IIA.

No. 2. A short convex hexagonal biconical bead of medium polish, double perforation. No. 874, MG.N. C(5). Period IIA.

No. 3. A hexagonal barrel bead of transparent crystal. No. 32, MG.N. A(4). Period IIB.

No. 4. A smooth, medium polished, twisted hexagonal bicone bead of transparent crystal, elegantly faceted. No. 599, MG.N. D(5). Period IIA.

No. 5. A spherical bead, transparent, slightly worn out. No. 577, MG.N. A(5). Period IIA.

No. 6. Tablet-shaped with veined interior, slightly worn out. No. 31, MG.N. E(2). Period III-IV.

No. 7. A double-capped crystal pendent with slightly hexagonal sides, having a number of slanting lines incised on both surfaces to give the effect of decoration, perforated at the base of the upper cap, finely polished. No. 89, K.W.N. (3). Period III.

No. 8. A truncated, biconical, hexagonal faceted bead with double perforation, slightly worn out. No. 5024, MG.N. D(5). Period IIA.

Pl. XXI, No. 2. A polished crystal couchant lion pendent with the tail end tapering, curved and broken, the other end shows the forelegs, the mouth, eyes and the mane; perforated near the chest; delicately made. No. 405, MG.N. D(3). Period III-IV.

Besides the above, two spherical [Nos. 829, 5040], one short barrel [No. 512], one biconical [No. 5187], one long hexagonal barrel [No. 616], and one truncated biconical hexagonal [No. 5094] beads were recovered. They belong to Period IIA.

Glass

Out of seven glass beads, six belong to Period III-IV, and one comes from the layer of Period IIA.

Two colours, green and blue, are used. One interesting bead is of composite glass technically called "blotched" [No. 442]. It consists of yellow matrix covered over by green glass [Fig. 46, No. 10] and belongs to Period III-IV.

Other shapes such as low truncated barrel and globular are represented by Nos. 21 [Period III-IV], 506 [Period IIA] and No. 5003 [Period III-IV], respectively.

Gold-foil Beads

All the three beads of this type were recovered from the layers of Period III-IV. Two are of short barrel groove collared variety (Nos. 131, 441), and the third is a barrel, tabular, groove-collared bead.

Fig. 46, No. 1. A short barrel groove-collared hollow bead with prominent collars. No. 131, MG.N. B(3). Period III-IV.

No. 2. A barrel tabular groove-collared bead much worn out and soiled. No. 146, MG.N. G(3). Period III-IV.

Gold

One bead of gold was found in the fourth layer of MG.E.N.

Pl. XXI, No. 3. A bead of circular body with collars at either side, body slightly distorted due probably to pressure from above, weight 2 grains. No. 5181, MG.E.N. Ie(4). Period III.

Jasper

Out of the nine beads five are of red and four of green jasper. Seven are globular, one is a truncated bicone, and one of a barrel shape. Layers of Period IIA yielded seven beads.

Fig. 46, No. 7. A globular bead of green jasper slightly worn out. No. 247, MG.N. G(5). Period IIA.

No. 8. A truncated barrel of green jasper. No. 185, MG.N. B(5). Period IIA.

No. 9. Globular in shape and having a perfect ring in a fine black line on the red body. No. 384, MG.N. C(5). Period IIA.

There are five others of a globular shape all belonging to Period II [Nos. 383, 403, 737, 813, 834]. No. 403 is unbored, and No. 737 is a big perforated ball of green jasper. No. 748 is a barrel of red jasper and belongs to Period III-IV.

Lapis Lazuli

Two beads of lapis were found, both belonging to Period IIA. The material used is of a medium quality presenting a slightly soiled hazy-grey-blue appearance.

Fig. 45, No. 11. A long cylindrical bead, slightly irregular, with a soiled body. No. 812, MG.N. D(5). Period IIA.

No. 12. A square cylinder bead with three faces soiled and the fourth slightly polished and having bright navy-blue patches over a greyish surface. No. 744, MG.N. E(5). Period IIA.

Opal

Three specimens of this material were found. One is a drop pendent. All belong to Period II.

Fig. 45, No. 15. A fine drop pendent perforated at the top and having opalescent and milky base, both the top and the base are flat. No. 549, MG.N. C(5). Period IIA.

The other two are twisted pentagons with perfect facets [Nos. 659 and 688].

Quartz

Fourteen out of fifteen beads of this material came from layers of Period II, and one from that of Period IV.

Elegance of finish and selection of multi-coloured material are two noteworthy features of these beads. Twisted pentagon is a common shape.

Fig. 45, No. 13. A truncated, biconical hexagonal bead with rounded flats in a stone with opalescent and translucent layers which divides the bead into two halves, one half being milky white. No. 300, MG.N. C(5). Period II A.

No. 14. A hexagonal, barrel-shaped bead with chamferred ends and panelled facets in a well selected material with a central opaque band in between translucent layers. No. 5016, MG.E.N. (1). Period IV.

No. 16. Twisted, pentagonal bicone bead with intermediate facets, of opalescent quartz. No. 659, MG.N. E(5). Period II(A).

No. 17. Double-pentagonal, biconical, with intermediate facets, grey coloured, chalcedonic quartz. No. 673, MG.N. E(4). Period IIB.

Out of the rest, No. 213 [Period IIA] is similar to No. 300 above but with half of its body pinkish and the other half colourless. The whole bead is girdled around the circumference by three fine and close lines in milky white. No. 5041 is a twisted pentagon of milky white quartz. No. 5053 is a truncated hexagonal bicone with pentagonal facets, and No.5056 is a fragment of a bead probably similar to No. 5053. All these belong to Period IIA.

Shell

Five shell beads were recovered. One of them is a conch shell bored at the top. Three belong to Period IIA and two to Period IV.

Fig. 46, No. 5. A tabular triangular shell pendent thicker at the top where it is perforated, smooth and polished. No. 5189, MG.N. B(5). Period IIA.

Other shapes are circular, broadbased and slightly tapering [No. 30, Period IV], biconical with groove collars [No. 687, Period IIA], cylinder-disc [No. 785, Period IV], and a perforated shell [No. 5188, Period IIA].

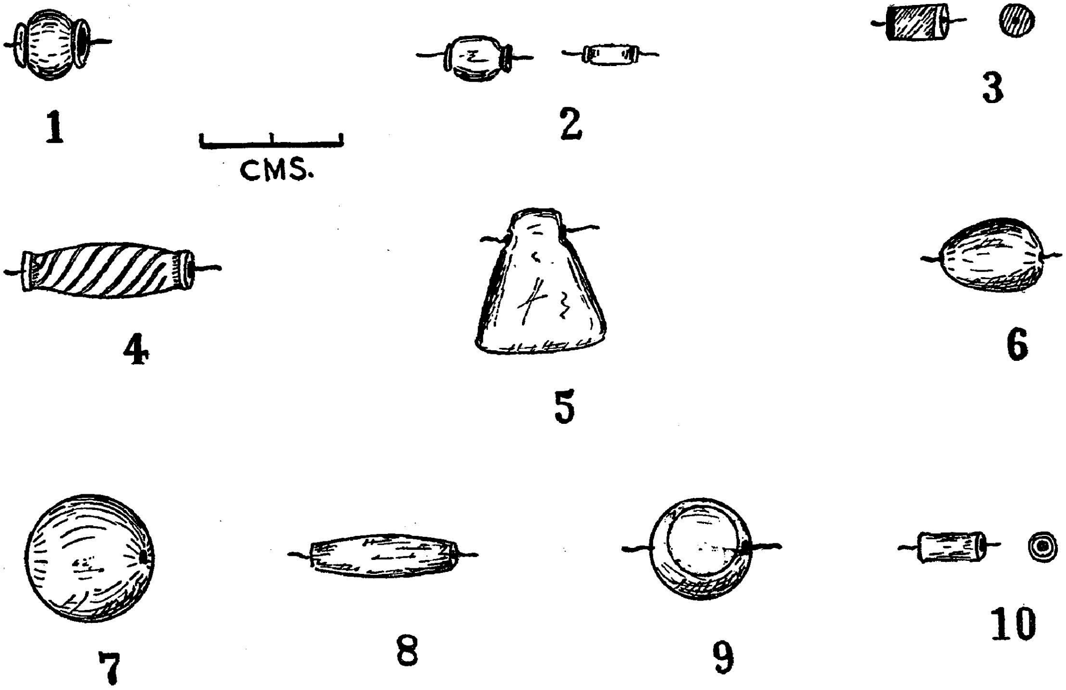


Fig. 46. Beads (Goldfoil, Agate, Bone, Shell, Amethyst, Jasper, Glass).
(*See pp. 87, 89, 90*)

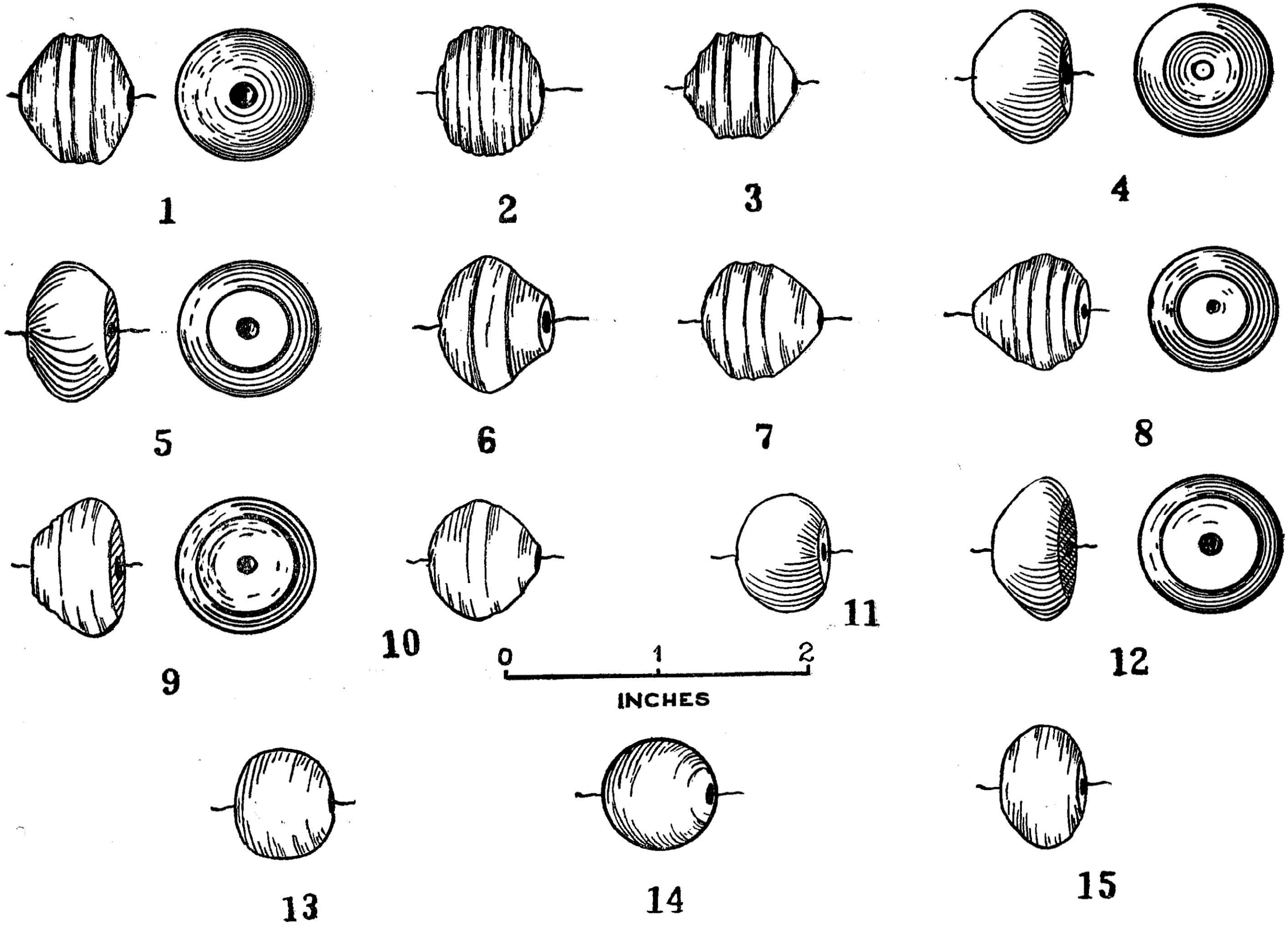


Fig. 47. Beads (Terracotta).

(*See p. 91*)

Soapstone

A double-pentagon of blackish ash coloured soapstone was found in the layer of Period IIB. It is smooth, polished and well faceted. [No. 673].

Terracotta

Out of 93 terracotta beads, 85 are stratified. Fundamentally identical in shape—areca-nut—they differ in details from one another. They are wheel-made, as indicated by the perfect and close grooves around the body of many of them.

Majority of these beads are concentrated in layers of Period II, though they seem to have been in use in all the later periods as well.

Some of the varieties among the basically areca-nut shape are as follows —

(i) Standard Areca-nut shaped. [Fig. 47, Nos. 4, 5, 12,].
Nos. 9, 14, 27, 76, 110, 119, 124, 128, 141, 150, 153, 159, 160, 176, 210, 214, 219, 242, 252, 286, 372, 412, 413, 416, 419, 433, 443, 445, 480, 507, 508, 509, 510, 592, 612, 614, 790, 5096 [the rest unstratified].
Periods. IIA, 16; IIB, 8; III-IV, 13.

(ii) Top-shaped with faint grooves on the body and rounded base. [Fig. 47, Nos. 6, 10].
Nos. 161, 209, 244, 254, 262, 265, 418, 426, 665, 667, 671, 760, 828.
Period IIA, 12.

(iii) Pot-shaped with truncated top, convex base, grooveless body. [Fig. 47, No. 15].
Nos. 39, 229, 243, 341, 415, 419, 641, 680, 759.
Periods. IIA, 6; IIB, 1; III-IV, 2.

(iv) Roughly globular. [Fig. 47, No. 13].
Nos. 208, 235, 236, 283, 414, 444, 511, one unnumbered.
Periods. IIA, 6; IV, 2.

(v) Spherical. [Fig. 47, No. 14].
Nos. 166, 288, 355, 741. All Period IIA.

(vi) Having a series of grooves so as to have an effect of gadrooning. [Fig. 47, Nos. 2, 3,8,9].
Nos. 264, 340, 682, 740, 790, one unnumbered. All Period IIA.

(vii) Pulley-shaped, with a pair of symmetrical grooves round the circumference. [Fig. 47, Nos. 1, 7].
Nos. 207, 253, 285, 505, 1 unnumbered. All Period IIA.

(viii) Perfectly low plano-convex [Fig. 47, No. 11].
Nos. 372, 376, 446. All Period IV.

Besides the areca-nut shape, two other varieties are represented by No. 594 which is low truncated barrel, and No. 424 a truncated bicone with faint broad grooves on the body. Both these belong to Period IIA.

Distribution

The layerwise distribution of Nasik beads is as follows :—

LAYER	TRENCHES				
	MG.N.	MG.N.N.	MG.S.N.	MG.E.N.	K.W.N.
5	99	....	....	....	....
4	12	1	....	1	....
3	21	....	....	2	1
2	5	....	....	3	1
1	1	....	....	1	....

This shows that layers of Periods II [i.e. 4 and 5] at MG.N. yielded 69.3% of the total number of beads. The meagre amount of beads in Period III may be due to the fact that the debris of this period were not extensively dug. The layers of Period IV are very much disturbed and it is possible that some of the beads found in them belong to earlier layers.

General Remarks

The absence of unfinished beads or core lumps of different materials shows that Nasik was not a bead industry site at any time. The amount of beads also is not much. Even among that terracotta beads are 53% of the total.

The remarkable feature of the terracotta beads is the range of variety in the basically areca-nut shape. These beads are found over a very wide stretch of time at various sites[1], from proto-historic times at Mohenjodaro to the Maratha period at Nasik. Probably nowhere else, except at Kosam in U.P., such a minute differentiation in the areca-nut shape is found as at Nasik.

1. *Harappa* : Vats, *Exc. at Harappa*, Vol. I, p. 408 : Gupta period acc. to Beck; *Taxila* : (Sirkap) : " Pear shaped ", attributed to all phases I-IV from c.A.D.50 to 2nd cent.A.D. : *Ancient India*, No. 4, pl. XI, Nos. 33-35 ; *Brahmagiri* : three varieties, found in Andhra and Megalithic levels : *Ancient India*, No. 4, pl. CXX, 42-44, also p. 265 ; *Bairat*, Sahni, *Exc. at Bairat*, pl. V, No. 9 ; *Kondapur*, Dikshit, *Beads from Kondapur*, p. 22, pl. V, No. 238 ; (also *ABORI*, pl. XII, 17th Row) ; *Arikamedu*, *Ancient India*, No. 2, Fig. 41, Nos. 42-44 ; *Kolhapur*, Sankalia & Dikshit, *op. cit.*, pp. 93-4 ; *Baroda*, Subbarao, *Baroda through the Ages*, " a large number of types among the areca-nut beads ", p. 74, occurring in Periods II to IV i.e. 100-1300 A.D., Fig. 30. A number of these are also reported from *Karad* in the Deccan, and *Kosam* in U.P.

Though carnelian and agate are found in the Deccan[2], the principal source of carnelian is a village called Limodra near Ratanpura in the Rajpipla State [Gujarat] from where the stones are sent for cutting and polishing to the lapidaries of Cambay.[3] Cambay and Broach are well known centres of bead industry since early historic times[4]. It is, therefore, quite possible that beads of carnelian, agate, jasper and blood-stone came to Nasik from Cambay. This is further corroborated by the absence of unfinished beads or large cores of these stones at Nasik. The shapes of the carnelian beads of Nasik are common and the etched bead is exactly similar to one found at Taxila[5]. The dates of both of these [c. 3rd cent. B.C.] tally well.

The crystal beads, though remarkable for their polish, show no new shapes. At least three of these are identical with those found in the Andhra period at Kondapur, viz., long hexagonal truncated barrel[6], tablet-shaped[7], and short truncated hexagonal barrel[8]. Of the three, the tablet shape is frequent in South India, and Dr. Dikshit specifically denotes it as " South Indian Type ".[9]

The two lapis lazuli beads have the most common shapes. Square cylinders have been found from several sites in the Deccan such as Kolhapur[10], Kondapur[11], Maski and Kallur[12]. Everywhere this shape can be ascribed to c. 3—2 cent. B.C. Even though beads of lapis have been found from the Indus Valley sites, the material is not indigenous to India[13]. It is, therefore, likely that these came to Nasik from outside.

Among the quartz beads some of the shapes viz. hexagonal bicone with rounded flats and one with panelled facets are rare. It may, however,

2. Wadia, D. N., *Geology of India*, pp. 360-1.

3. *Bombay Gazetteer*, Vol. VI, pp. 12, 162, 168 ; Arkell, A. J., Cambay and its Bead Trade, *Antiquity*, Vol. X, p. 301.

4. *Bombay Gazetteer*, Vol. VI, pp. 11-12; 162 f.n. 1; 205-06; Arkell, *op. cit.*, pp. 208 ff.

5. Beck, *Beads from Taxila*, pl. II, No. 7.

6. Dikshit, M. G., *Beads from Kondapur* (1952), pl. I, No. 27. (Cf. Nasik, Fig. 45, No. 1).

7. *Ibid.*, I, 38 (Cf. Nasik, Fig. 45, No. 6).

8. *Ibid.*, I, 43 (Cf. Nasik, Fig. 45, No. 3).

9. *Ibid.*, p. 9.

10. Sankalia and Dikshit, *op. cit.*, p. 91.

11. Dikshit, *op. cit.*, pl. II, No. 83.

12. Deccan College Museum collection.

13. *Bombay Gazetteer*, Vol. VI, p. 201 : "......it is found in rounded balls in Persian and Bukharan river beds."

be noted that the former shape in chalcedony, agate and carnelian has been found at Taxila[14] and Kondapur[15].

Glass beads at Nasik have two peculiarities. The first is represented by a few specimens of what is called as " gold-foil bead. " Similar beads are found in the Deccan at Karad [Bombay] and Kondapur[16] where they are ascribed to the Andhra period. At Kolhapur also they were found in layers of the Satavahana period[17]. The other variety is " the blotch bead " consisting of yellow matrix covered over by green glass. An exact parallel to this shape and make is reported from the Bahmani layers at Kolhapur[18].

Out of the five pendents, three are of known shapes, viz., tabular triangular of carnelian and shell[19], and the drop pendent of opal. Especially the drop pendent is a favourite shape in different materials at Taxila[20].

The other two [hexagonal body with two caps, and lion : both of crystal] are outstanding for shape and polish. Of these two, one [the lion] belongs to Period II. It is possible that the other pendent also belongs to the same period considering the fact that the layers of Period III in which it was found, are much disturbed. Pendents of this shape have not been so far recovered elsewhere. These are the finest specimens in the whole lot of beads at Nasik.

VIII

BANGLES AND OTHER GLASS OBJECTS

Bangles, as found at Nasik, were either of shell or of glass. Out of the fifty-six specimens, thirty-seven were of conch shell and the rest of glass.

CONCH BANGLES

Of the thirty-seven specimens, thirty-two came from stratified layers. All of these, except two [Nos. 424 and 5504] came from layers

14. BECK, *op. cit.*, compare, pl. II, Nos. 38 (3rd cent. B.C.), 40 (4th cent. B.C.), 44 (1st cent. A.D.). These are, however, called as " cemented eye " beads. Nasik bead is not an eye-bead ; The Kondapur specimen is of chalcedony ascribed to Andhra period, DIKSHIT, *op. cit.*, pl. II, Nos. 103-04 : " occur frequently in the 2nd cent. B.C. levels at Kosam " (p. 12, f.n. 2) ; for the panelled facet variety, compare, pl. II, Nos. 41-42 ; BECK, *op. cit.*, pl. II, 41 (only for shape).

15. DIKSHIT, *op. cit.*, pl. IV, Nos. 206-09.

16. DIKSHIT, *op. cit.*, pl. IV, Nos. 206-09.

17. SANKALIA and DIKSHIT, *op. cit.*, p. 101.

18. *Ibid.*, p. 104.

19. BECK, *op. cit.*, pl. VIII, No. 14 [without rounded base].

20. *Ibid.*, pl. III, 12, 13 [agate] ; IV, 25, 27, 31 [carnelian] ; V, 7 [quartz] ; VI, 24 [lapis], 26 [granite], etc.

(1) to (3) showing that shell bangles were current at Nasik mostly in Period IV, that is, in the Muslim-Maratha phase of occupation.

Two fragments of shell bangles belonging to Period II have nothing distinctive about them. They are neither decorated nor well made. No. 424 coming from layer (4) i.e. Period IIB has a slightly double-convex cross-section, while No. 5004 recovered from layer (5) has a rectangular one.

The bangles of Period IV can be divided into two types—plain and decorated. The former, made in most cases out of the thickest part of a conch-shell and eighteen in number, vary from 38 mm. to 76 mm. in diameter and are of brown-creamy colour in several cases.

Plain Bangles

The plain ones may be divided into the following varieties —

(i) With a plano-convex cross-section : [Nos. 6, 11, 28, 29, 148 and 376].

(ii) With an elliptical cross-section : [No. 23].

(iii) Slightly oval in section : [Nos. 23a, 120].

(iv) With a rectangular cross-section : [Nos. 63, 126, 138, 395a, 5004].

(v) Miscellaneous :
No. 20, Elongated oval section : MG.N. A(2).
No. 395, Slightly crescent-like section : MG.N. E(3).
No. 440, With a cross-section like the English 'r' : MG.N. D(3).

Decorated Bangles

The decorated varieties have a wide range of ornamentations over them. The most common decoration seems to be leaving a knob—either circular or heart-shaped—in relief on the outer surface [Nos. 9, 16, 17, 40d]. The other decorative patterns are 'v' shaped parallel incisions [No. 9], a pair of vertical parallel incised lines [No. 13], a number of parallel incisions [No. 16], incisions at random [No. 14, 140d], and a faint groove along the outer surface [No. 132]. Besides these, there are a few specimens which reveal a more elaborate and perfectly symmetrical range of designs, as for instance : an incised rope-like design [No. 132a], a series of vertical diamonds in relief which give the outer surface an appearance of segmentation [No. 716]; small vertical incisions near the ends of the outer surface with a pair of parallel horizontal lines along the circumference enclosing in between them a design of incisions and pentagonal "beads" in relief [No. 148a]; and lastly, octagons in relief with four radial incisions in them appearing like a floral design [No. 5005].

These decorated varieties are usually broader than the plain ones, and have uneven thickness. It may also be noted that these shell bangles are not always perfectly circular in shape, and being cut out of a shell at its thickest part and curvature they assume sometimes the shape of a bow [No. 17] or the English letter 'ε'.

The layerwise distribution of these bangle pieces irrespective of their classification as made above is as follows :—

Periods	Layer No.	MG.N.	MG.E.N.	MG.N.N.	K.W.N.	MG.S.N.
IV	1	8	1	..	..	..
IV	2	14	1	1	1	..
IV	3	5	..	..	..	..
IIB	4	1	..	..	..	..
IIA	5	1	..	..	..	..

Out of these, some specimens are illustrated in pl. XXI:

No. 11. Half of a broad shell bangle with the outer surface having vertical incisions bounded by a pair of horizontal lines near both the edges. Breadth 10-11 mm. No. 748, MG.N. D(3).

No. 12. Fragment, squarish cross-section, the outer surface decorated by horizontal incised line, a series of short vertical lines and a slightly triangular knob in the middle. Breadth 4-5 mm. Thickness 4 mm. No. 16, MG.N. G(2).

No. 13. Fragment, slightly plano-convex cross-section; having a pair of successive horizontal incised 'V' design and a roughly heart-shaped knob in relief in the middle. Breadth 8 mm. Thickness 3.7 mm. No. 9, MG.N. G(2).

No. 14. Bow-shaped fragment of a shell bangle, thin and having a circular knob in relief in the middle of the outer surface. Thickness 5 mm. No. 17, MG.N. G(2).

No. 15. Square cross-section, uneven thickness, and an incised rope-like design on the outer surface. Breadth 6 mm. Thickness 4.5 mm. No. 132a, MG.N. G(1).

No. 16. A fragment of uneven thickness and breadth, roughly rectangular in section, the outer surface decorated with rough octagons in relief having four radial incisions in them appearing like a floral pattern. Breadth 7 mm. Thickness 6 mm. No. 5005, MG.E.N. II(2).

No. 17. A fragment with a round section and the outer surface having a series of vertical diamonds in relief which give it an appearance of segmentation. Breadth 6 mm. Thickness 5 mm. No. 716, MG.E.N. (1).

No. 18. A fragment, thick in the middle, having four vertical and parallel incised lines which have a random design at one end and somewhat 'V' shaped incisions at the other end; the 'V' shaped designs enclose in between them a slightly triangular knob in relief. Breadth 7 mm. Thickness 5 mm. No. 140d, MG.N. D(2).

No. 19. A milky-white fragment, plano-convex in section, having short vertical incised lines near the two edges enclosed by a pair of horizontal lines; the latter enclosing in between them a decoration consisting of vertical lines in hexagonal panels in relief. Breadth 10 mm. Thickness 4 mm. No. 148a, MG.N. G(2).

Glass Bangles

Out of the nineteen fragmentary glass bangle pieces, sixteen came from stratified layers. All these were recovered from the two top layers

in all the trenches and hence can be ascribed to Period IV. Though bangles were known in Period II, not a single piece of glass bangle was found in layer (4) or (5). This seems to support the inference reached from Kolhapur evidence, viz. that though glass making was known, bangles, particularly polychrome, were first made in the Deccan only in the 14th-15th century.

The use of monochrome and polychrome glass bangles seems to have been contemporary inasmuch as both these varieties were recovered almost in the same quantity from identical layers.

Monochrome

Among the nine monochrome pieces [in addition to which three were also recovered from the surface], six were decorated either with grooves, incised dots or short vertical lines on the outer surface, and three were plain. Six out of nine have a triangular section, while two have a plano-convex, and one a squarish section.

The range of colours includes chocolate, blue, green, black and purple. The thickness varies between 2 to 3.5 mms.

Monochrome

Antiquity No.	Colour	Section	Opaque or Transclucent	Decoration	Findspot
25	Chocolate	Square	Opaque	Grooves	MG.N. G(2)
60	Bluish	Triangular	Transclucent	Incised vertical lines	K.W.N.d_2 (2)
64	Dark green	Plano-convex	,,	Nil	,, d_4 (2)
103a	Blue	,,	,,	,,	,, d_2 (2)
108	Dark Orange or Deep Brown	Triangular	,,	Incised dots	,, c_2 (2)
838	Green	,,	,,	,,	MG.E.N.(1)
864	,,	,,	,,	,,	,, (1)
865	Black	Plano-convex	Opaque	Nil	,, (2)
866	Purple	Triangular	,,	Grooves and incised dots	,, (1)

Polychrome

The seven polychrome fragments reveal a limited range of colours. Yellow and its shades and combinations, green and white seem to have been the most popular colours even though black, chocolate and ashy were used. These bangles are identical in colour and fabric to those from Kolhapur and examined by Dr. LAL, Archaeological Chemist, Government of India. From his report, it is possible to say that the yellow and black colours are due to the presence of oxide of iron, white due to that of tin, green due to those of copper and iron.

His remarks regarding a polychrome bangle piece from Maski hold good even in the case of similar bangles from Nasik as well. He says, "....the craftsmen who fabricated this bangle were adept in the art of handling glass and could manipulate molten glass with great skill. The designs have obviously been executed by sticking to the body of the bangle carefully prepared bands of glass of different colours".

The thickness of the polychrome pieces is more than that of the monochrome variety. The former varies between 2.5 to 6 mm.

Polychrome

Antiquity No.	Colours	Section	Opaque or Transclucent	Findspot
65	Yellow, white, black	Triangular	Opaque	K.W.N. d2 (2)
103	,,	,,	,,	,, d2 (2)
311	White, orange, yellow, ashy	,,	,,	MG.N. D(2)
845	,,	,,	,,	MG.E.N. II (2)
877	Deep yellow, light yellow, chocolate, green	Square	Opaque and transclucent	,, II (2)
5014	Yellow, white, orange, green	Rectangular	,,	,, III (1)
5015	Yellow, chocolate, green	,,	Semi-transclucent	,, III (1)

The illustrated polychrome pieces are as follows [pl. XXI].

No. 4. Roughly rectangular cross-section ; having yellow colour at the base over which there is a chocolate coloured layer containing truncated barrel-shaped design in yellow which itself contains a truncated double convex green patch having a oblique yellow line. Breadth 5 mm. Thickness 2.5 mm. Diameter 50 mm. No. 5015.

No. 5. Fragment of a green and yellow glass bangle having yellow and white vertical lines on an orange square lying over a bigger greenish rectangular decorative base. Breadth 5 mm. Thickness 3.4 mm. Diameter 60 mm. No. 5014.

No. 6. Squarish cross-section ; having a yellow layer near the inner circumference over which there is a green one ; over the latter are chocolate-coloured bead-like dots in relief and whitish yellow elliptical decoration. Breadth 3 mm. Thickness 3.4 mm. Diameter 75 mm. No. 877.

No. 7. Opaque ; triangular section ; having a thin layer of ashy colour over which there is a broad yellow band covered over by another thin layer of orange colour ; the latter having white dots in relief. Breadth 7 mm. Thickness 6 mm. Diameter 50 mm. No. 311.

No. 8. A fragment with triangular section with a band of white colour at the base covered over by another of yellow, at the apex is a thin band of ashy colour. Breadth 5 mm. Thickness 4 mm. No. 103.

No. 9. Opaque, with triangular cross-section ; at the apex is a yellow band while the rest of the body is whitish ; on one side there are a series of decorations in light black. Breadth 4 mm. Thickness 5 mm. Diameter 50 mm. No. 65.

No. 10. A fragment of triangular section with ashy-coloured band at the base covered by another broad band in orange, over the latter a yellow thin band with bead-like dots in white. Breadth 7 mm. Thickness 4 mm. No. 845.

Glass Ring

A single fragment of a black glass ring was found. Its breadth was 11 mm. It had a somewhat porous surface, and was recovered from K.W.N. d_2 (2). It, thus, could be ascribed to Period III—IV. Not illustrated.

Other Objects of Glass

Besides bangles of glass, thirty-three other objects of glass consisting of discs, pieces of highly disintegrated glass and fragments were found.

Their trench and layerwise distribution is as follows :—

Layer No.	MG.N.	MG.S.N.	MG.E.N.	K.W.N.	MG.N.N.
1	1	1	1	1	1
2	..	..	3	2	..
3	3	1	..	..	..
4	4	..	..	..	..
5	16	..	..	..	..

It is evident from the above classification that more than half of the glass objects belong to Period II, and nearly half out of these to sub-Period A of the same.

Weathered Glass

Out of the objects belonging to Period II the most interesting are the six fragments of weathered glass. Out of these six, four belong to layer (5) [i.e. Period IIA], one to layer (4) [i.e. Period IIB] and one to layer (3) Some of the specimens were sent to Dr. B. B. Lal, Archeaelogical Chemist, Government of India, for examination.

All the six specimens are very brittle and have a somewhat glossy white appearance. It is quite likely that at least Nos. 821 and 821A were bangle pieces with the outer surface concave.

On examining No. 821 [MG.N. E(5)], Dr. Lal remarks that "the sample is highly weathered. It seems to have been made originally of ordinary glass, but now much of the alkalies has been eliminated as a result of leaching and the Silica has accumulated. The sample shows about 80.99%

Silica..............The soda-lime silicates have........been more or less completely altered as a result of weathering. Part of the Silica is now present as Chalcedony and Opal".

His report on No. 5026 [MG.N. D(5)], which consists of pieces of decayed glass is more or less similar to that on No. 821. Here also, according to him, "the greater part of the alkali originally present in the sound glass has been leached out by water in the course of centuries of burial in the soil. The percentage of Silica.........is 87.55........The specimen shows iridiscent colours so characteristic of decayed Roman glass. From this it is clear that as a result of weathering, the complex soda-lime silicates have been largely altered with the formation of secondary Silica some of which has been deposited as Chalcedony showing the typical structure and some of it has been re-deposited as Opal".

No. 550 [MG.N. B(5)] is an irregular piece of black blue-grey glass. It is only superficially weathered but has a sound and fresh core. It is composed of ordinary soda-lime glass. "The black colour of the glass has been completely obscured by a layer of Silica which has got deposited on the surface as a result of weathering". It is probably a part of a black disc-like object.

GLASS DISCS

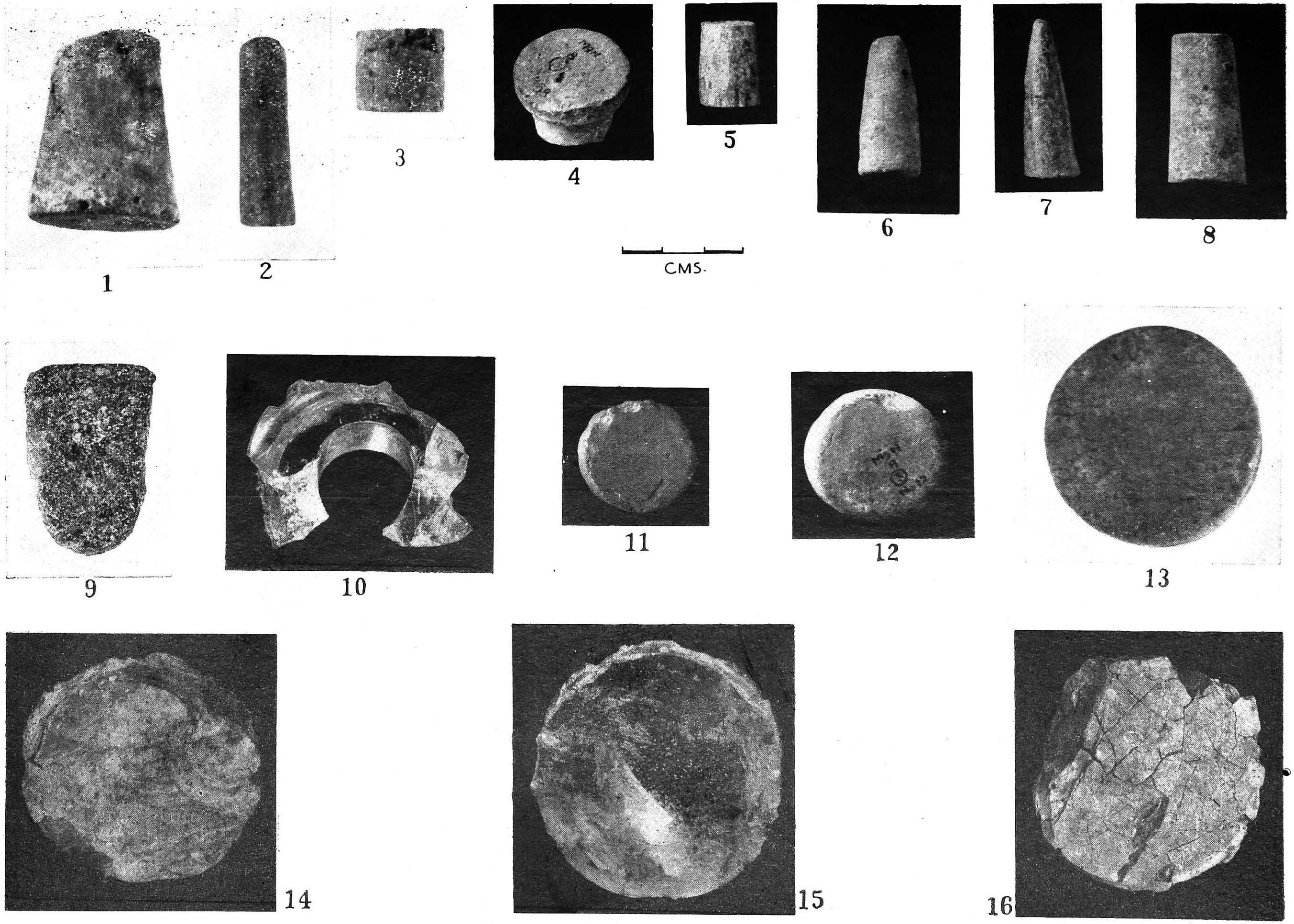
Out of the seven glass discs recovered, layer 5 [i.e. Period IIA] of MG.N. yielded four; MG.S.N. layer 3, one; layer 1, one; and MG.N.N. layer 3a, one specimen.

The complete specimens which are five in number are all similar in shape. They are disc-shaped with a groove at the thickness of the circumference. Only one is having a hole in the middle, while the others are unperforated.

Similar discs of glass were found at Kolhapur, Karad, Kondapur and elsewhere in early historic layers. Their purpose cannot be determined.

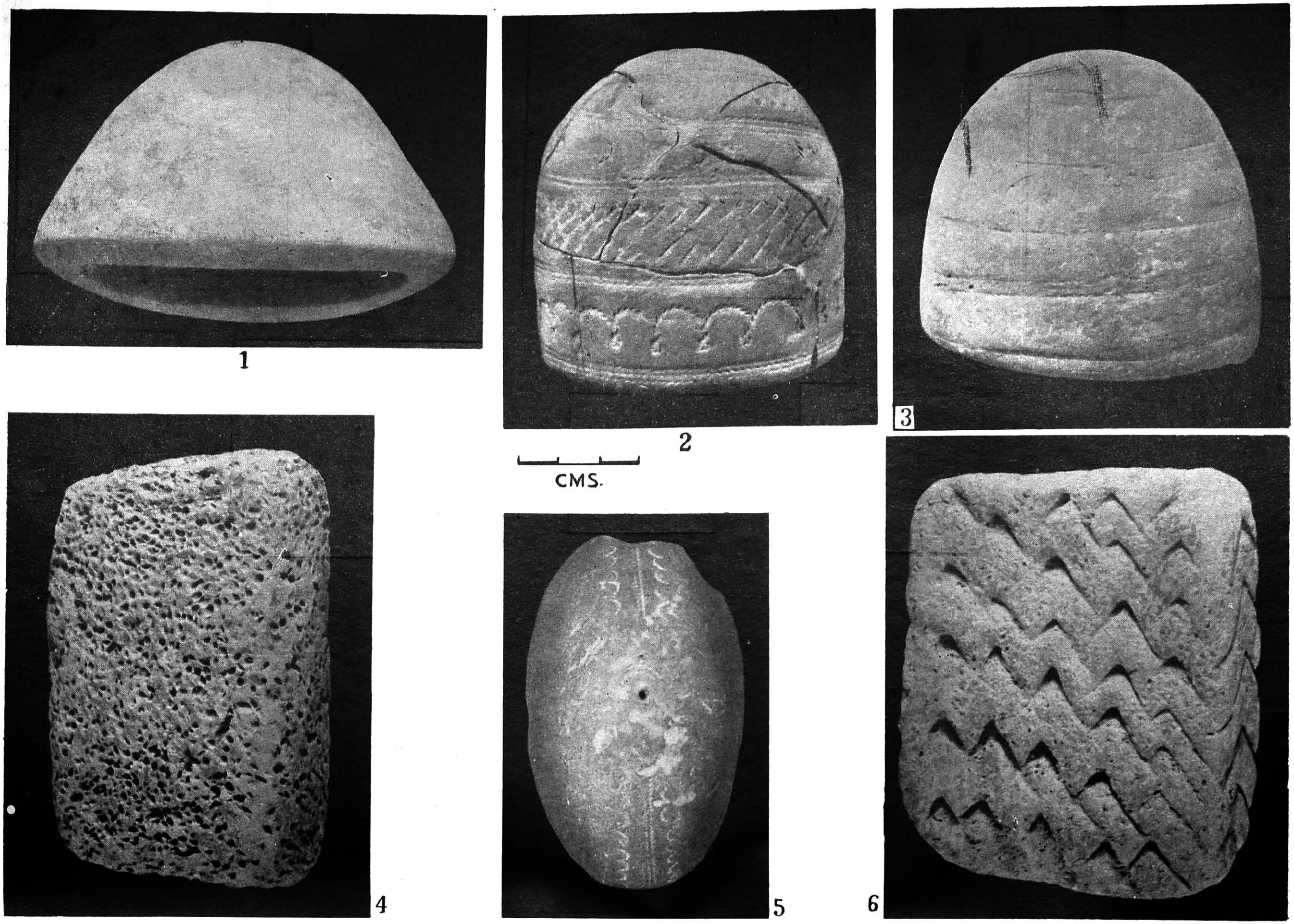
Out of the seven, two are light blue in colour, three white, one vermilion or liver-red coloured, and one highly weathered. Their range of diameters varies between 61 to 69 mms., and that of thickness between 21 to 9 mms. [pl. XXII].

No. 10. Light blue-coloured disc, extremely worn out, having a groove at the thickness of circumference; perforated in the middle. Diameter 59 mm. Diameter of the hole 23 mm. Thickness 18 mm. No. 193, MG.N. F(5). Period IIA.



Glass and Terracotta objects. Terracotta Stoppers (1–8, 12–13), Crucible (9), Glass tablets (10, 11, 14–16). (*See pp. 100, 101, 105, 107*)

PLATE XXIII



Terracotta Skin-Rubbers (1, 4, 5 and 6), Stupas (2 and 3). Period II.

(*See pp. 102-105*)

No. 11. A small and thin disc, vermilion coloured, slightly worn out at the edges.[1] Diameter 29 mm. Thickness 9 mm. No. 651, MG.S.N. (1). Period III-IV.

No. 14. Similar to above but smaller and thinner, and exposing a vermilion red core under ashy surface. Diameter 58 mm. Thickness 9 mm. No. 5164, MG.N.N. (3a). Period II.

No. 15. Complete specimen similar in shape to above, but unperforated and white in colour; having bubbles and cracks. Diameter 61 mm. Thickness 21 mm. No. 5046, MG.N. D(5). Period IIA.

No. 16. A glass disc much broken, cracked and highly weathered, of ashy-yellow colour. Diameter 61 mm. Thickness 14 mm. No. 692, MG.S.N. (3). Period II-III (?).[2]

IX

TERRACOTTA OBJECTS

A variety of terracotta objects was obtained from various trenches at Nasik. These include skin-rubbers, toys, figurines, stoppers, wheels, crucibles, *stupas* and tiles. Most of these belonged to Period II as would be clear from the following details.

Skin Rubbers

Fourteen terracotta skin-rubbers of rectangular and semi-circular shapes were found.

These rubbers may be divided into four types as follows :—

(*a*) Of rectangular shape with both the surfaces made rough with particles of sand and tiny grains of an unidentified material,

(*b*) With pores over all the surfaces of the rectangular body,

(*c*) With deep decorative incisions on the rectangular body, and

(*d*) Roughly semi-circular and hollow, with the outer surface either decorated with incisions or plain.

1. "......The glass is transclucent to opaque but shows liver-red colour in reflected light. Chemical analysis shows that the colour is due to Copper Oxide ".

2. Dr. Lal remarks—"......it has undergone considerable alteration due to prolonged burial in the soil. As a result of this weathering, alkalies have been leached out and insoluble siliceous material has accumulated. It contains a very high proportion of silica (about 80%) and some clayey matter, and the amount of alkalies is only 2.41%.... It appears that the silica present in glass originally as a complex soda-lime silicate has been deposited as a result of weathering as opal and chalcedony....These fragments show a remarkable iridescence characteristic of disintegrated and decayed glass. This iridiscence is due to the lenticular flakes of silica deposited on the surface as a result of weathering ".

The distribution of the above types is as follows :—

Type	Total	Findspot	Layer	Period	Unstratified.
a	1	MG.N.	(5)	IIA	..
b	3	,,	,,	,,	..
c	4	,,	(5)—2	IIA	
			(3)—1	III-IV	
d	6	MG.N.	(5)—3	IIA	
		MG.S.N.	(2)—1	III-IV	1
		K.W.N.	(X4)—1	II	

Thus all these types were current in Period IIA. The following are illustrated [Fig.48].

No. 1. A rectangular piece of terracotta skin-rubber with three corners broken, and one of the surfaces made rough with particles of sand. [Type a]. Length 93 mm., breadth 76 mm., thickness 23 mm. No. 5099 A, MG.N. E(5). Period IIA.

No. 2. A terracotta skin-rubber with well-defined circular pores on all sides of the body made possibly with tiny, round and sharp end either of iron wire or with reed. [Type b]. [Also pl. XXIII, No. 4]. Length 95 mm., breadth 67.5 mm., thickness 25 mm. No. 5099, MG.N. E(5). Period IIA.

No. 3. A rectangular terracotta skin-rubber with a series of deliberate, deep, slightly 'V' shaped incisions at regular intervals decorating both the broader surfaces; incisions possibly made with the tip of a sharp blade of something. [Type c]. Length 99 mm., breadth 64 mm., thickness 20 mm. No. 313, MG.N. A(5). Period IIA.

No. 4. With more prominent 'V' shaped deep incisions over all the surfaces of the body [Also pl. XXIII, No. 6]. Length 92 mm., breadth 77mm., thickness 32 mm. No. 764, MG.N. (3). Period IV.

No. 5. A hollow terracotta skin-rubber with a semi-circular outline, thin and compact walls, the outer surface is red, smooth and having a hole at the top, while the inner surface is dull and rough [Type d]. Length of the base 90 mm., max. breadth of the base 41 mm., thickness of the walls 5 mm., height 49 mm. No. 654, MG.S.N. (2). Period III-IV.

No. 6. A boat-shaped terracotta skin-rubber of buff colour, without a perforation at the top. Length of the base 85 mm., max. breadth of the base 46 mm., thickness of the walls 16 mm., height 31 mm. No. 281, MG.N. G(5). Period IIA.

No. 7. A parabolic, hollow, cap-shaped, reddish terracotta skin-rubber, having a convex, elliptical base ; the outer surface has a partial hole at the top and two closely parallel dotted lines along the outer outline as also a hollow knot-like incised design [similar to the Brāhmi letter 'ma'] over the lines on either side just above the base. [Also pl. XXIII, No. 1]. Length of the base 94 mm., max. breadth of the base 52 mm., thickness of the walls 13 mm., height 65 mm., No. 831, MG.N. C(5). Period IIA.

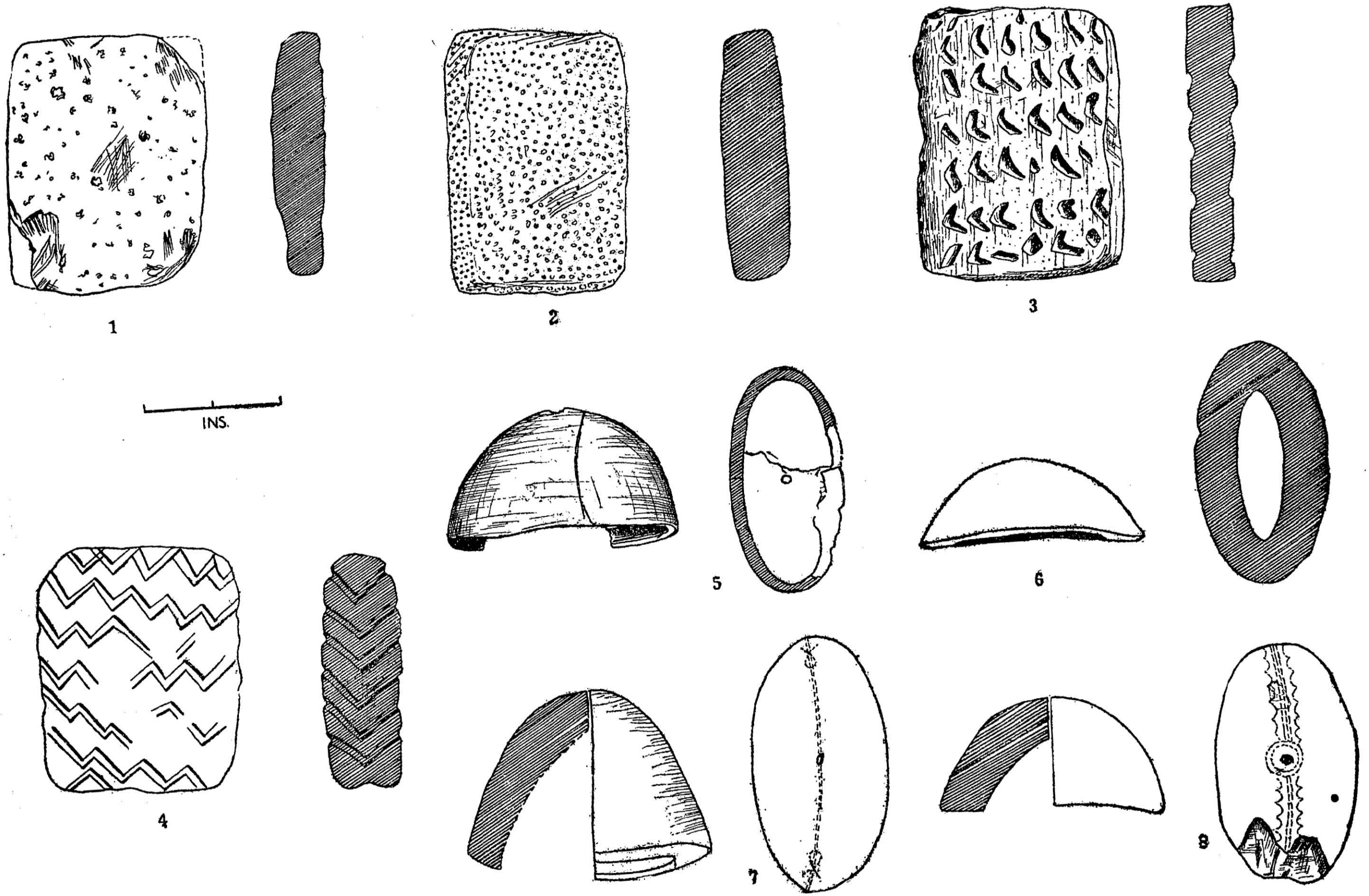


Fig. 48. Skin-Rubbers.

(*See p. 102*)

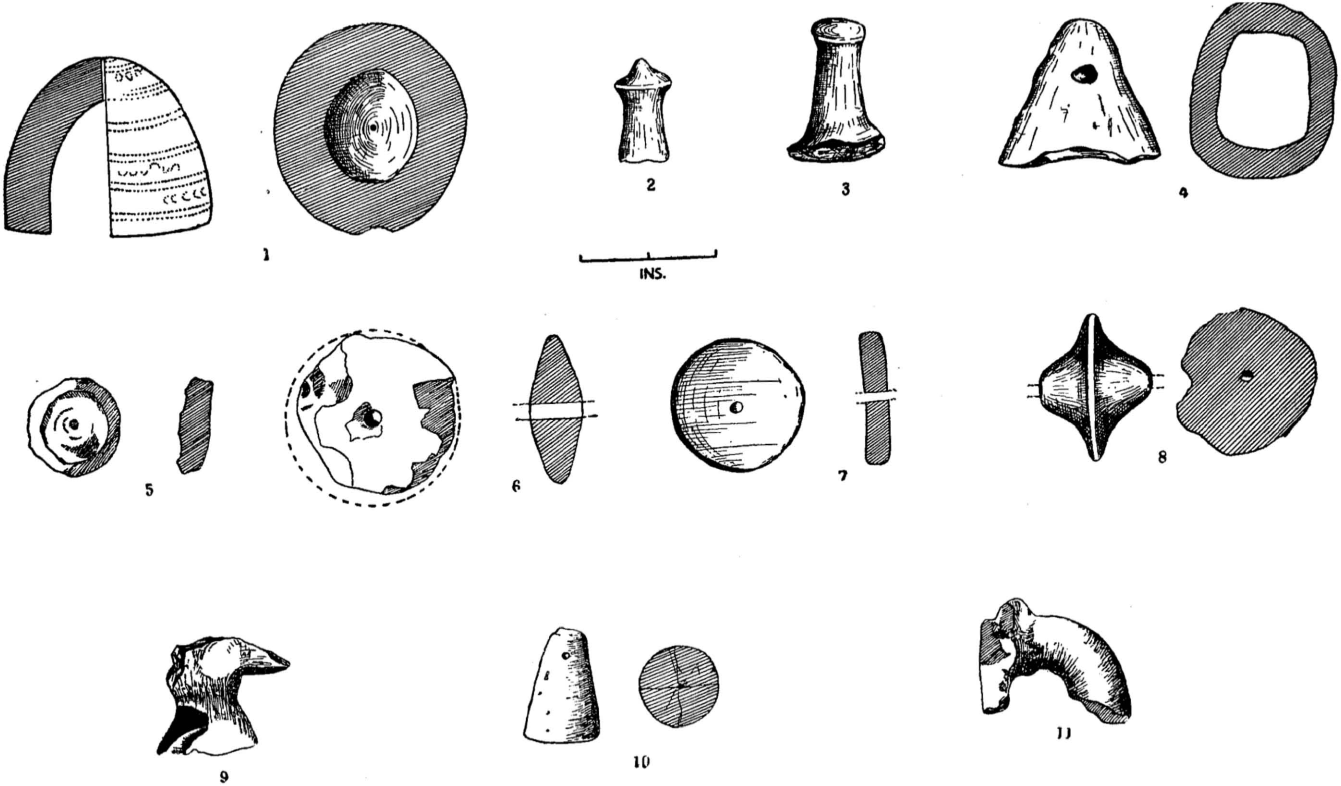


Fig. 49. Stupa, Terracotta Wheels and Miscellaneous objects.
(See pp. 103, 105, 108)

No. 8. A terracotta skin-rubber of ashy black colour, slightly worn-out, with a boat-shaped outline and the outer surface having a partial hole at the top; there is a group of three parallel dotted lines along the outer surface enclosed by a pair of wavy incisions; the perforation is surrounded by a pair of concentric dotted incised circles and an irregular wavy design. [Also pl. XXIII, No. 5]. Length of the base 84 mm., max. breadth of the base 52 mm., thickness of the walls 15 mm., height 40 mm. No. 83, K.W.N. A6 (X4). Period II.

Terracotta Wheels

Twelve pottery and terracotta wheels out of which seven belong to layers of Period II, were recovered. These may be grouped under the following types :—

(1) With a double convex outline, and perforated : [No. 793, Period IIA].

(2) With an either curved or straight, elongated, rectangular cross-section with slightly rounded ends :

(*a*) Perforated [Nos. 228, 394, 409 : Period IIA—1; III-IV—2].

(*b*) Unperforated [Nos. 712, 873, 5057, X : Period IIA—1; III-IV—1 ; Unstratified 1].

(3) Similar to (2) but with one side having spiral-like embossed circles :

(*a*) Perforated [No. 282 : Period IIA].

(*b*) Unperforated [No. 154 : Period IIB].

(4) With a pronounced, rounded and holed hub on either side, [No. 117 : Period III-IV].

The following are illustrated [Fig. 49].

No. 5. A slightly worn out terracotta wheel with a small groove-like depression at the circumference ; one side having a linear spiral embossing around the centre; unperforated. [Type 3b]. Diameter 35 mm., max thickness 11 mm. No. 282, MG.N. C(5). Period IIA.

No. 6. A well baked bi-convex terracotta wheel with a red slip, worn out (circular) outline, and a neat circular hole in the middle.[Type 1]. Diameter 62 mm., max. thickness 24 mm. No. 793, MG.N. E(5). Period IIA.

No. 7. A terracotta wheel with a red slip, a hole in the centre, and worn out edges. [Type 2a]. Diameter 40 mm., thickness 6 mm. No. 394, MG.N. E(4). Period IIB.

No. 8. A yellowish, well-baked terracotta wheel broken at the edge; having a hole right through the rounded hub on either side; possibly a toy-cart wheel. [Type 4]. [Also pl. XXV, No. 6]. Diameter 53 mm., max. thickness 37 mm., length of the hubs 24 and 19 mm. No. 117, MG.N. C(3). Period IV.

TERRACOTTA TOYS

Three specimens of these were found ; one from surface, one from the layer of Period IIB, and one from that of Period III-IV.

Ram

A terracotta ram with one leg and the mouth broken, but with only the twisted horns in relief. The whole body having a sort of a red wash; ill-baked. [pl. XXV, No. 2]. MG.N., surface.

Elephant

Fig. 50, No. 3. The specimen is of tiny size with only one of the hind legs intact, one fore leg almost half, while the rest two completely broken. It belongs to the cast variety; it is solid and having a well marked protruding and tapering trunk with rough depressions near the temples to show the ears; the temples are well marked with a slight depression between them; the tail is lost; the legs do not seem to have been perfectly perpendicular but are slightly stretched so as to give stability when the toy is placed on the ground. [Also pl. XXV, No. 4]. Length of the body 37 mm., thickness 15 mm., length of the leg 14 mm., length of the trunk 17 mm. MG.N. E(4). Period IIB.

Indeterminate [Fig. 50.]

No. 4. A much broken fragment of a terracotta toy with the portion of the head completely broken as also of the legs ; it has a flat back and the pair of hind legs is marked by a deep and medium broad groove which runs over the portion of the back also. Length 72 mm., max. thickness 75 mm. MG.N. F(3). Period III-IV.

TERRACOTTA FIGURINES

Fig. 50. No. 1. Mother goddess, one fourth fragment, [48 mm. broad, 71 mm. long (high), 30 mm. thick], showing the left hand and part of navel and abdomen and stunted left leg. The figure was made in a double mould, baked and coated with a thin wash and smoothed. Identical figure in terracotta found at Kolhapur [1945-46] and Tripuri [1952]. [Also pl. XXIV, No.2]. Even though unstratified, since the figure has a close resemblance to the figure of a Mother-Goddess found at Kolhapur[1], it may be assigned to Period II. No. 849, MG.E.N. Unstratified.

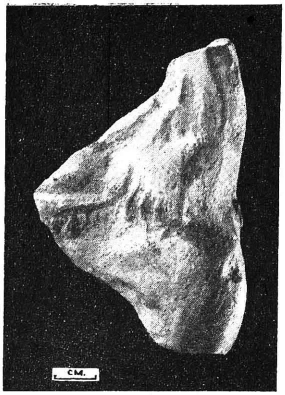
Fig. 50. No. 2. Female figurine, upper half, (bust), rest broken, (36 mm. long (high), 40 mm. broad, 17 mm. thick). The figure is solidly cast or made. The eyes, lip, mouth, the head-dress, neck ornaments, and arms are indicated by shallow incisions. [Also pl. XXIV, No. 1]. Length 34 mm., breadth 37 mm., thickness 17 mm. No. 822, MG.N. E(5). IIA.

TERRACOTTA CRUCIBLES

Four terracotta crucibles with a blackish glossy enamel over both the inner and the outer surfaces were found. Out of the four, two are smaller

1. SANKALIA and DIKSHIT, *Excavations at Kolhapur*, pl. XXI, A ; also pl. XXXIII, No. 3. [reproduced from Kolhapur Report].

1



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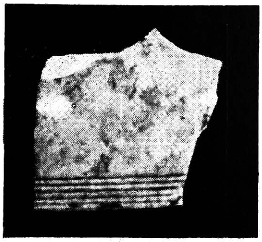

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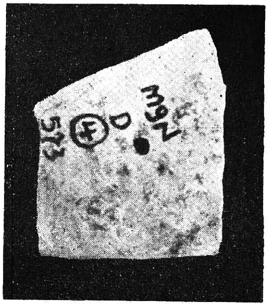
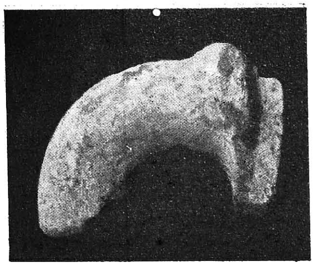


Terracotta Figurines 1 and 2, (3 from Kolhapur), Kaoline objects (4-6). Period II-III.

(*See pp. 83-104*)

PLATE XXV



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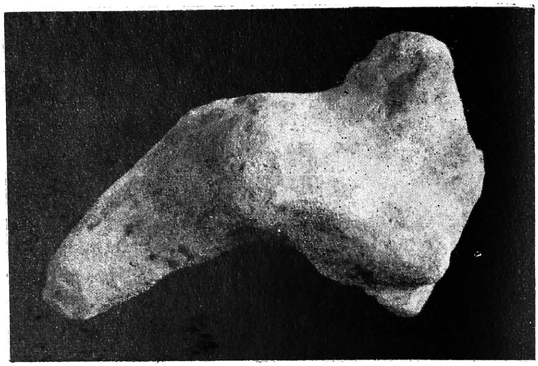

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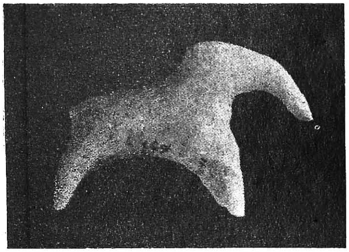

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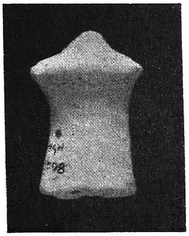

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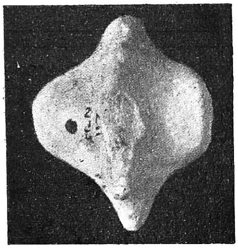
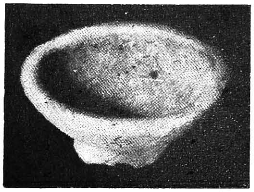
5



6



7

8

Terracotta Toys, (except Nos. 3, 5). Period II.

(*See pp. 103, 104, 105, 108*)

and intact, and the other two bigger but much broken. One belongs to Period IIA, one to IIB and two to Period III-IV. The specimen from Period IIA is illustrated.

Pl.XXII, No. 9. An intact terracotta crucible with a rounded base ; smaller in shape and thickness; the outer surface is smooth and enamelled while the inner one somewhat rough ; the mouth is not circular but elongated on plan. Height 43 mm., thickness 6 mm., diameters of the mouth 24.5 and 31 mm. No. 876, MG.N. C(5). Period IIA.

Terracotta Toy-lids (?)

Among the terracotta objects was a group of six similar objects, some with horizontal projection at the top and some devoid of it, with a hollow inside, and appearing in some cases like a bell. The purpose of these objects is not clear but it may be that they were probably used as lids by children. All belong to Period IIA.

Fig. 49, No. 9. A hollow reddish terracotta object with a horizontal projection existing on one side only at the top; the projection was probably used in lifting up the object which was possibly used as a lid. Total height 42 mm., diameter of the base 37 mm., length of the projection from the centre of the top 31 mm. No. 725, MG.N. B(5). Period IIA.

Two other specimens are illustrated in pl. XXV, Nos. 7 and 8.

Terracotta Stupas

Two very interesting specimens of terracotta *stupas* were recovered from layer (4) of MG.N. Found in association with potsherds and querns bearing Buddhist symbols, these stupa models definitely show that the occupants of this phase had strong Buddhist affinities. Such small *Stupas*, it appears, have not been hitherto found elsewhere in India and that too in such early layers.

Fig. 49, No. 1. This is a semi-circular specimen, having a hole at the top, and a series of groups of parallel dotted incisions around the outer surface; the gaps in between these decorations are filled with semi-circles near the base and with somewhat pear-shaped incisions near the apex. [Also pl. XXIII, No. 3]. Height 66 mm., diameter of the base 77 mm. thickness of sides 18 mm. No. 563, MG.N. D(4). Period IIB.

Pl.XXIII,No.2. A much broken specimen but more in height and less broad-based than the above; the outer surface has incised decorations as follows—three parallel dotted lines near the base; then dotted complete arches, then a pair of three dotted lines enclosing in between them a design of dotted diamonds; then dotted arches; then three lines above which there are shallow leaf-like incisions; then come a series of four dotted circles around the hole at the top. The incised dotted circles on the outer surface are not perfectly circular but are oblique ; base thick but interior more hollow towards the top. Height 72 mm., diameter of base 67 mm., max. thickness at the base 18 mm. No. 563a, MG.N. A(4). Period IIB.

Tile

A single complete specimen of a tile was recovered from K.W.N. It is of a light red colour with some portions of it black due, probably, to uneven firing. It is rectangular in shape, has two circular holes at one breadthwise end, and three broad and deep grooves along the lengthwise body so that the edge stands in relief. At the back, but on the opposite edge, there is a shallow groove. It seems that the edge in relief was fitted in the groove of the adjoining tile, and thus the whole group of tiles was fixed probably on wooden rafters near the roof of a house by inserting iron nails through the circular holes at the breadthwise end of the tile. The tile when placed on the ground appears to be slightly convex, possibly to allow rain water pass rapidly over the tile through the grooves.

Similar tiles were recovered at Kolhapur[1] where they could be ascribed to Satavahana period. At Nasik it could be ascribed to Period III. The layers of Period II at MG.N. yielded a profuse quantity of nails which were, it can be surmised, used in association with such tiles.

Pl.XIV, No. 7. A rectangular tile, with rough porous surface; contains many sand particles and pieces of straw used possibly as binding materials. Length 252 mm., breadth 160 mm., thickness 27 mm., max. breadth of grooves 22 mm. No. 95, K.W.N. D2 (4). Period III.

Stoppers

Among the terracotta objects found at Nasik, a group of thirty-eight roughly conical, cylindrical and disc-shaped objects was noteworthy. A single specimen of a cylinder shaped bone piece was also recovered.

Similar cones and cylinders made of terracotta, shell and stone were found at Mohenjodaro[1a], Chanhudaro[2], Harappa[3], Rairh[4] [Jaipur State] and Bahal[5] [Khandesh].

Such pottery cones were also recovered at Jemdet Nasr in Mesopotamia, besides at Ur and Abu Shahrin along with painted pottery[6].

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1. Sankalia and Dikshit, *op. cit.*, pl. XX, B.

1a. Marshall, *MIC*, Vol. ii, pp. 476, 478-9 ; Vol. iii, pl. CXXX, Nos. 8, 27-9, 33 ; CXXXI, 42, 47-55 ; CXXXIV, 8-20 ; CLVI, 19.

2. Mackay, *Chanhudaro Exc.* p. 171 ; For Taxila, See J. Marshall, Vol. ii, p. 428.

3. *Anc. Ind.*, No. 3, p. 129 ; pl. L, Nos. 6, 10.

4. Puri, *Exc. at Rairh*, pl. XXI, No. 25.

5. Information from Shri M. N. Deshpande, Supdt., Deptt. of Arch. W.C.

6. Marshall, *Taxila*, Vol. ii, p. 478.

Scholars are not unanimous regarding the use of these objects. For instance, MACKAY remarks that "in Sumer, cones......... were used in large numbers to decorate the walls. Pottery cones were inserted in mud-brick walls as far as their broader ends, which were painted in various colours. This mode of decoration was particularly well developed at Uruk, where columned walls are covered with a mosaic of pottery cones in black and red"[7]. MARSHALL, in some cases, points out the resemblance of cones from Mohenjodaro with "the phallic object [Lingam] of the Hindus[8]". MACKAY, however, discounts this view and suggests that they might have been "used in some kind of game......perhaps to be knocked down by the little pottery balls frequently found at Chanhudaro[9]". PURI, on the other hand, upholds the possibility of the perforated specimens beings used as neck-beads for animals[10].

From their rough appearance and tapering or disc-like shape it may be suggested that these objects were probably used as stoppers for bottles inasmuch as even in modern times corks of similar shape can be had. It may be added further that these terracotta stoppers, since some of them have a shallow depression or groove in the middle portion, suggest the existence of terracotta containers [or bottles] which, however, were not found at Nasik.

Out of the thirty-eight stoppers, seventeen were found in layer (5), six in (4), ten in (3), two in (2), a single in (1) of MG.N., and two were unstratified. This suggests that such stoppers were in use at Nasik more in Period II represented by layers five and four—than in Periods III and IV.

These stoppers can be divided into the following categories :—

(a) With a conical top and flat base [Pl. XXII, Nos. 2,6,7]
Total 5. Periods IIA, 4; IV, 1.
Max. Height 45 mm. Min. 24 mm. Max. diameter 48 mm. Min. 13 mm.

(b) Conical with a truncated top and a flat base [Pl. XXII, Nos. 1,8]
Total 16. Periods IIA, 8; IIB, 5; IV, 3.
Max. height 47 mm., Min. 19 mm., Max. diameter 36 mm., Min. 3 mm.

(c) Perfect cylinders [Pl. XXII; Nos. 3,5]
Total 9. Periods IIA, 4; IIB, 1; IV, 2; 2 unstratified.
Max. height 38 mm., Min. 19 mm., Max. diameter 40 mm., Min. 21 mm.

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7. MACKAY, *op. cit.*, 1935-6, p. 171.
8. MARSHALL, *op. cit.*, Vol. ii, p. 476.
9. MACKAY, *op. cit.*, pp. 172-3.
10. PURI, *op. cit.*, p. 45. "As regards the other variety (i.e. those without perforation) it is likely that these were used in some sort of game."

(d) Flat cylindrical discs [Pl. XXII, Nos. 12, 13]
Total 7 Periods IIA, 1 ; IV, 6.
Max. thickness 23 mm., Min. 12 mm., Max. diameter 65 mm., Min. 27 mm.

(e) With a flat top and a concave grooved body [Pl. XXII, No. 4]
Total 1. Period IV.
Height 21 mm., Diameter 26 mm.

TERRACOTTA MISCELLANEOUS OBJECTS

A number of sundry terracotta objects was recovered. On account of the singular nature of each specimen, they could not be grouped or classified. Some of these are illustrated in Fig. 49.

No. 2. A terracotta object, most probably a gamesman but with the base broken. [Also pl. XXV, No. 3].
Height 39 mm. thickness 21 mm. No. 5098, MG.N. B(5). Period IIA.

No. 3. A solid terracotta object, broadening towards the base and with a rounded top; possibly a dabber. [also pl. XXV No. 5].
Total height 53 mm., breadth of base 36 mm. No. 5098A. No details.

No. 4. A conical, greyish, hollow terracotta object with a rounded top, and having a hole at a distance of 25 mm. from the top; of indeterminate use.
Total height 64 mm., thickness 8 mm., diameter of the existing base 63 mm. No. 609, MG.N. D(5) Period IIA.

No. 10. A conical, flat-based terracotta object with the smooth base having a pair of incised lines forming a + sign; the top is truncated and has a hole below it probably to pass a thread through it so that the piece should serve the purpose of a pendant.
Height 40 mm. Diameter of the base 29 mm. No. 5891, MG.E.N. I(1). Period IV.

No.11. A terracotta curved fragment of a handle, much worn out; the broader end has a smooth rectangular surface probably due to that side being stuck to a pot. [Also pl. XXV, No. 1]. Thickness 17 mm., height of the broader end 43 mm., breadth of the broader end 24 mm., diameter of the rounded end 13 mm.
No. 844, MG.N. C(5). Period IIA.

X

COPPER OBJECTS

Besides a few coins, other objects of copper were not much. These include Kohl sticks, a copper dish, a bangle, a ring, and an unidentifiable object, probably a handle. All these are described and a few illustrated.

No. 871. Thin cylindrical copper rod gradually tapering into a rounded end, the other end is broken. Probably a Kohl stick. 67 mm. long, 3 to 5 mm. thick. MG.E.N. Ie(3).

No. 469. Thin cylindrical copper rod, slightly thicker and rounded at either end. Probably a Kohl stick. 117 mm. long, between 1 and 3 mm. thick. MG.N. B(4). [Fig.51,c].

No. 600. Pieces of hollow copper rod, still rusted, as they would not stand full treatment. 62 mm. long, MG.N. D(4).

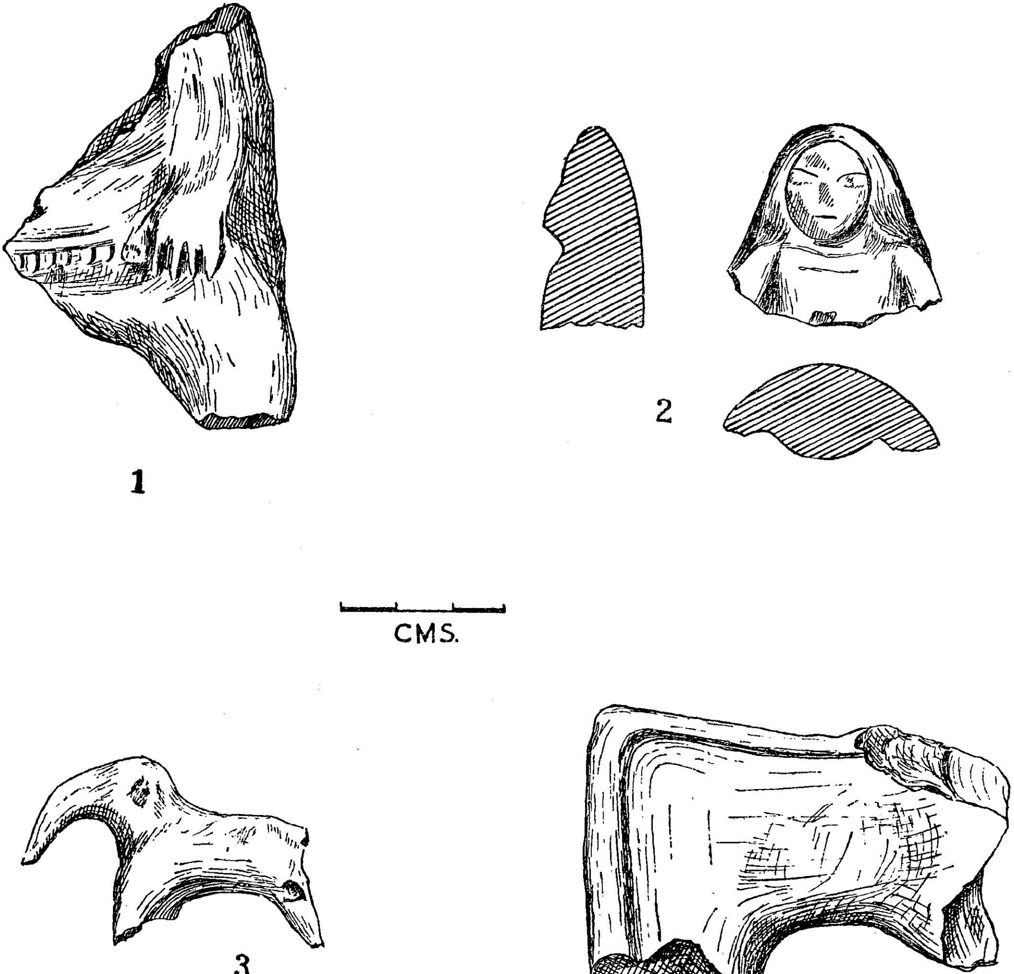


Fig. 50. Terracotta Figurines and Toys.

(*See p. 104*)

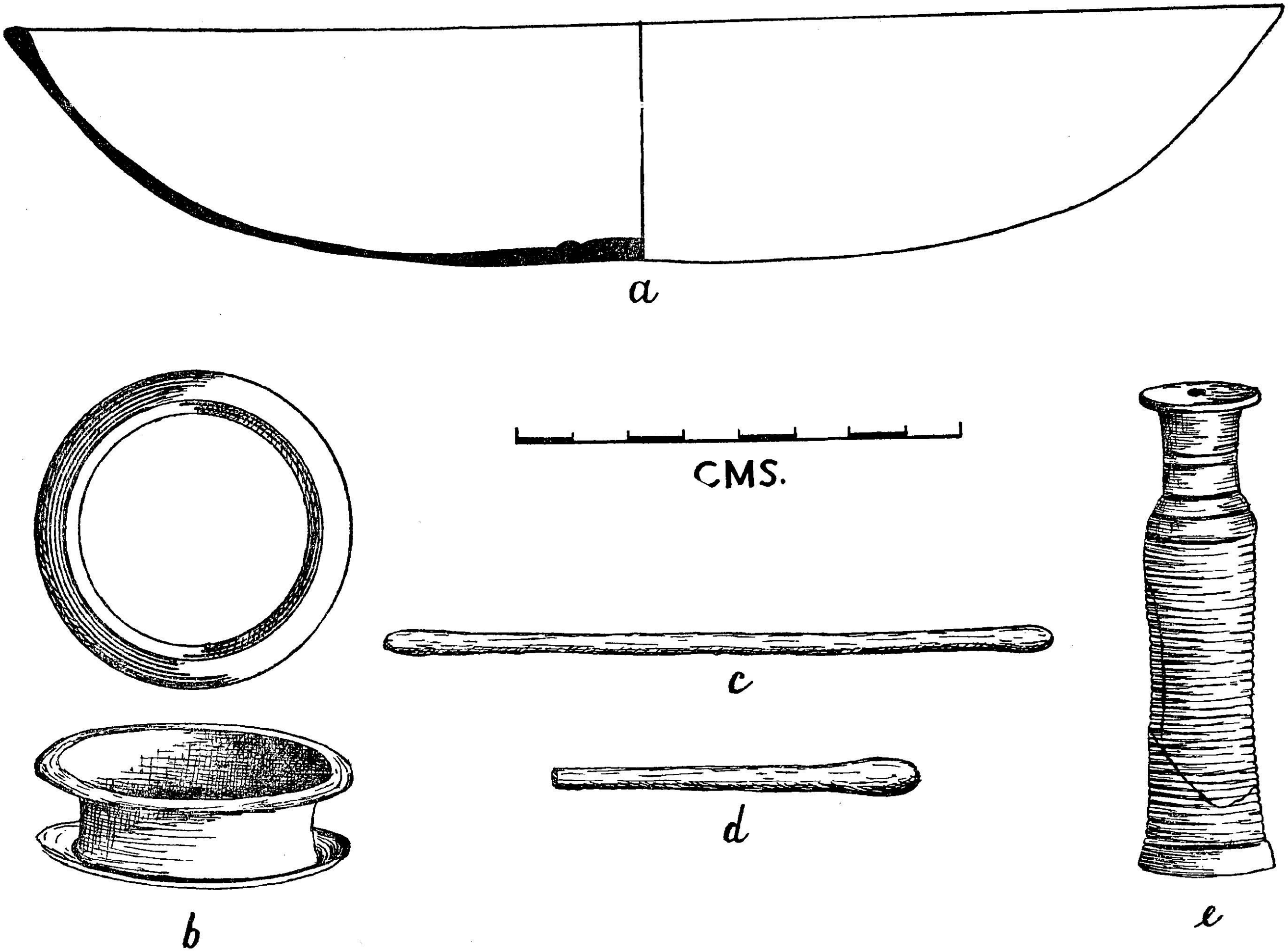


Fig. 51. Copper objects

(*See pp. 108-109*)

No. 144. Thin cylindrical copper rod—not cleaned. Probably a Kohl stick. 117 mm. long, MG.N. A(4).

No. 375. Thin cylindrical copper rod, beaten at one end by accident, broken at the other end. About 80 mm. long. MG.N. D(3).

No. 471. Thin copper rod, perhaps broken at one end. 55 mm. long, 1 mm. thick. MG.N. B(4).

No. 337. Thin cylindrical copper rod, pointed at either end. About 140 mm. long. MG.N. D(2).

No. 145. Thin cylindrical copper rod, rounded at either end. Kohl stick 96 mm. long, MG.N. G(2).

No. 696. Thin cylindrical copper rod, rounded at both ends. Probably a Kohl stick. 83 mm. long. MG.S.N.(2).

No. 495. Fragment of an inverted rim through which a copper wire runs round. The rim had holes for suspension. The outside of the vessel was decorated with 'a dot and circle' decoration. MG.N. B(5).

No. 473. Copper ring, with a central oblong flat surface. Diameter (inner) 17 mm. MG.N. Unstratified.

No. 472. Copper bangle or large ring with a deep, broad groove on the circumference (or with raised borders). Probably this was inlaid or wound with silver and gold threads. Similar type found in glass. Diameter 55 mm., inner 45 mm. MG.N. C(5). 12 feet 8 inches. Found with a saddle quern below 2nd floor level. [Fig. 51, b].

No. 481. A stand or handle-like cylindrical object, broken in 4 pieces, with tapering ends, having flat surfaces. Possibly the end is slightly broader at the butt end or at the base, and the narrower, with a hole, for insertion the front or the top end. There is a broad, deep groove below this. The whole is marked by thin grooves all over the body. 90 mm. long, diameter, base 23 mm., top 21mm. MG.N. B(5). [Fig. 51, e].

No. 652. Thin, shallow copper dish, with broad, flat base, and flaring sides. Completely rusted with beautiful green patina and in pieces though found partly intact. MG.S.N. (3). [Fig. 51, a].

XI

IRON OBJECTS

Comparatively a large number of iron objects was recovered. The list given below indicates a variety of objects of domestic and non-domestic use :

Arrowheads 13, Caltrops 2, Spearheads 2, Choppers 3, Tang fragments 11, Axe blade 1, Drill 1, Chisel 1, Cup 1, Rings 5, Nails 40, and indeterminate 6.

Nearly ninety per cent of these came from the two phases of Period II, and quite a large number was heavily encrusted.[1]

1. Unfortunately, many of these heavily encrusted objects crumbled to pieces in transit inspite of utmost precautions. The labels containing their stratification details were also lost. The loss, however, could be made good by taking resort to the Antiquity Register.

Objects like the caltrops, arrow-heads, choppers, spearheads, axe, drill and others found in the trench MG.N. should normally indicate the nature of the occupants. The large number of storage jars suggested that the occupants might be dyers. But these and other associated objects indicate that the occupants were persons who were concerned either with the preparation of tools and weapons (as ironsmiths) or with fighting (as soldiers).

Arrowheads

Of the thirteen specimens, five came from layers of Period II, three from Period IV and in the case of five, details could not be had.

In all, five types are available :[2]

(a) Blade with a diamond-shaped section 1,
(b) Leaf-shaped blade 6,
(c) Triangular blade 4,
(d) Horn-shaped projections 1,
(e) Indeterminate 1.

Out of the six leaf-shaped specimens two belong to Period IIA, two to Period III-IV and two lack stratificational details.

The same is true of the triangular blade variety.

The variety with a diamond-shaped cross section and a tapering tang belongs to Period IIB, while in the case of the arrowhead having a crescent-shaped projecting head, details are lost.

Out of these thirteen, as many as nine were with tangs, three with sockets and one heavily encrusted fragment is beyond recognition. Arrowheads with sockets are generally taken to be older than those with tangs. Their distribution is as follows :—

Out of nine with tangs :—
4 can be assigned to Period II and
2 can be assigned to Period III-IV.
3 must remain indeterminate.

Out of three with sockets :—
One belongs to Period III-IV, and two are of an indeterminate period.

2. On account of heavy rust forming deformed outline it was not possible to have exact cross-sections. This, therefore, is a rough classification.

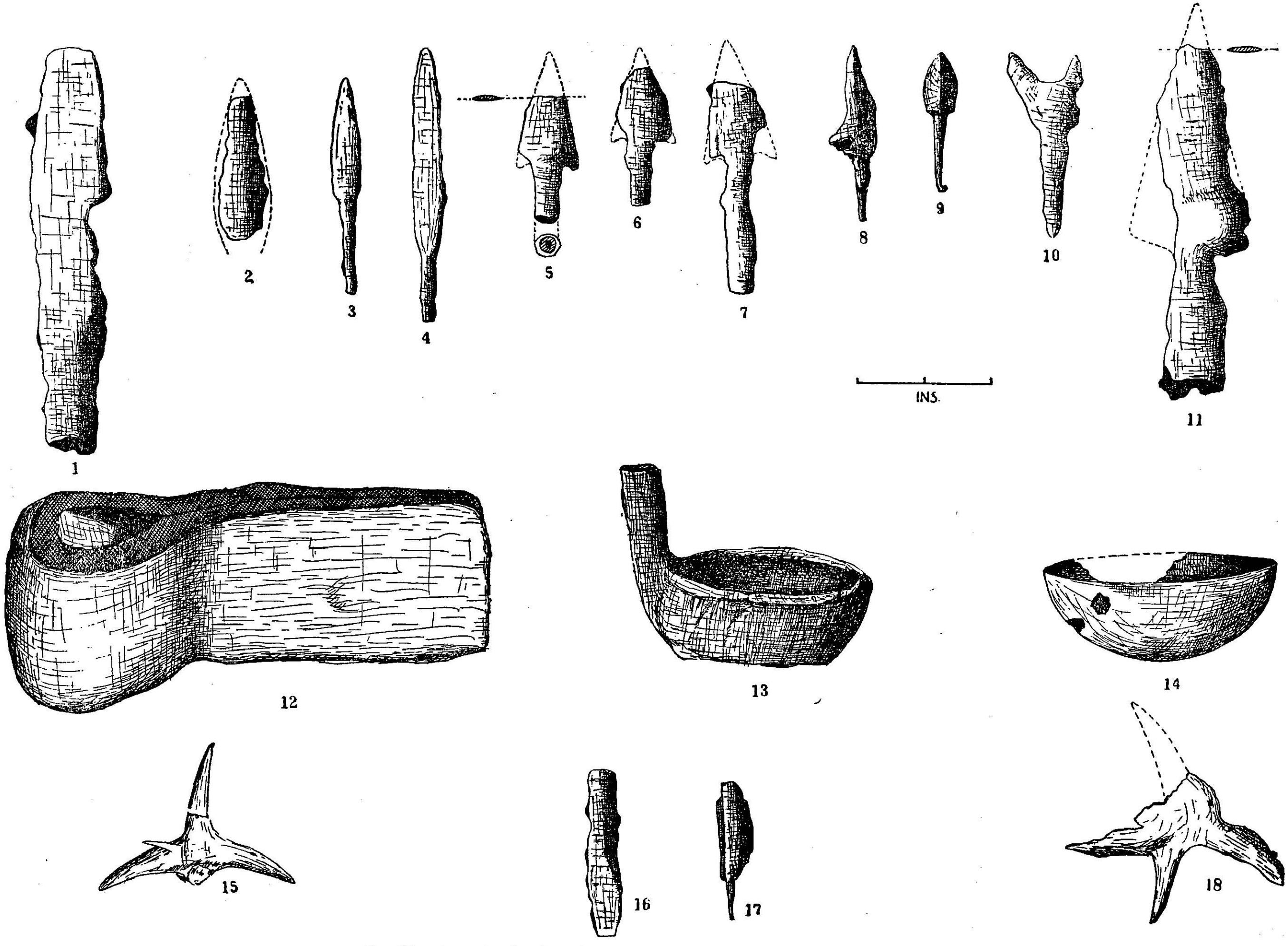


Fig. 52. Arrowheads, Axe, Lamps, Spearheads, Caltrops, Chisel and Drill.
(*See pp. 111, 112, 114*)

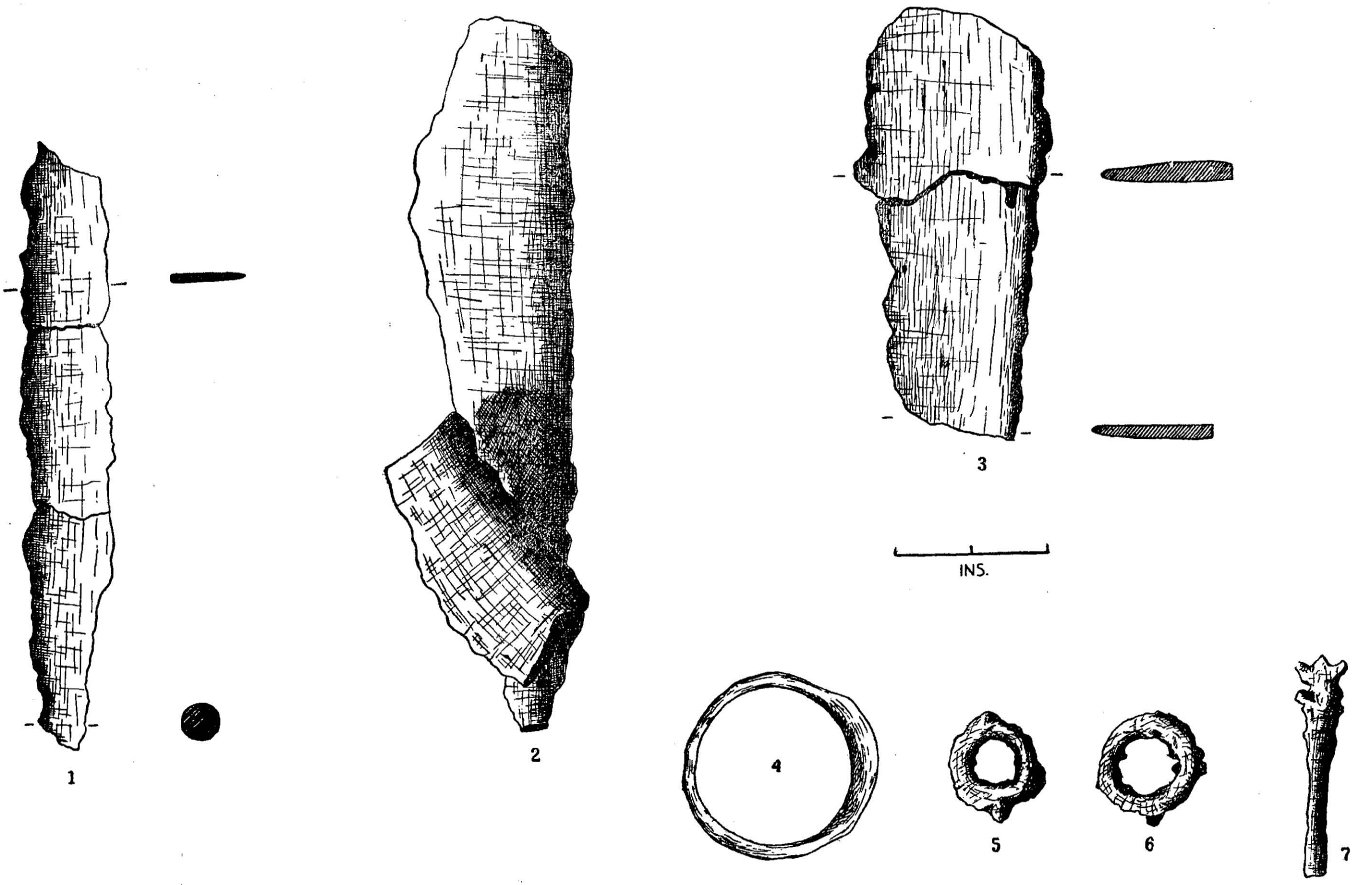


Fig. 53. Choppers and Rings.
(*See pp. 112, 113, 116*)

The nine illustrated varieties are as follows [Fig. 52] : —

No. 2. A fragment of probably a leaf-shaped arrrowhead with both the tip and the end broken, possibly having a tang. Length 54 mm., breadth 18 mm. No. 605, MG.N. D(5). Period IIA.

Cf. PETRIE, *Tools and Weapons*, pl. XLII, No. 191.

No. 3. An elongated leaf-shaped, tanged, arrowhead with a thin blade, cylindrical tang and an elliptical cross-section of the blade. [Also pl. XXVI, No. 1]. Length 81 mm. and breadth of the blade 12 mm., length of the tang 35 mm., diameter 3 mm. No. 91. K.W.N. C4(1). Period III-IV.

Cf. PETRIE, *op. cit.*, pl. XLI, No. 30.

No. 4. Similar to No. 3 but with a more elongated blade and a short tang with a squarish cross-section. Total length 102 mm., length of tang 22 mm. thickness of tang 4 mm. breadth of the blade 12 mm. No details available. [Also pl. XXVI, No. 2].

Cf. PETRIE, *op. cit.*, pl. XLI, No. 30 but without a knob or ring round the tang.

No. 5. A socketed arrowhead with a triangular blade having concave shoulders ; broken tip; cross section of the blade elliptical and that of socket circular. [Also pl. XXVI No. 3]. Total length 47 mm., length of blade 25 mm., breadth 22 mm., diameter of socket 9 mm. No. 682, MG.S.N. (3).

Cf. PETRIE, *op. cit.*, pl. XLI, 112 and *Anc. Ind.*, No. 5, Fig. 10, No. 18, p. 94, Sisupalgarh.

No. 6. Similar to No. 5 above, but with a shallow socket. [Also pl. XXVI, No. 4]. Length 51 mm., length of blade 26 mm., breadth 21 mm. diameter of socket 7 mm.. Details lost.

Cf. PETRIE, *op. cit.*, pl. XLI, 117, 112, 10, 104; pl. XLII, No. 216.

No. 7. Similar to No. 5 but with a longer socket. [Also pl. XXVI, No. 5]. Total length 81 mm., length of blade 28 mm., (breadth 23 mm.) length of tang 53 mm., diameter 10 mm. Details lost.

Cf. PETRIE, *op. cit*, pl. XLI, No. 117.

No. 8. A tanged arrowhead with probably a triangular blade having a diamond-shaped cross-section, and a tapering tang. [Also pl. XXVI, No. 6]. Length 64 mm., length of tang 25 mm., breadth of blade 18 mm. No. 291, MG.N. A(4). Period IIB

Cf. PETRIE, *op. cit.*, pl. XLI, 151.

No. 9. A tanged arrowhead with slight shoulders, the tapering blade or head having four faces, and a diamond-shaped cross-section. [Also pl. XXVI, No. 7]. Total length 53 mm., length of tang 30mm., breadth of the blade 12 mm. max. thickness 10 mm. No. 82, K.W.N. A6 (X3). Period II.

Cf. *Anc. Ind.* No. 5, p. 94, Fig. 10. No. 20, Sisupalgarh.

No. 10. A heavily rusted tanged iron object—most probably an arrowhead—with two horn-like pointed projections forming a crescent-like concave head. [Also pl. XXVI, No. 15]. Total length 59 mm., distance between two horns 26 mm. No details.

Cf. PETRIE, *op. cit.*, pl. Nos. 166-7.

Spearheads

Only two spearheads were found, out of which one could be ascribed to Period II. In the case of the other, no details could be had. Both are socketed. [Fig. 52] :

No. 1. A fragment of a spearhead with one end developing into a rounded socket and the other i.e., the tapering leaf-shaped blade having an elliptical section. [Also pl. XXVI, No. 10]. Length 151 mm., max. breadth 34 mm., diameter of socket 20 mm. No. 197a, MG.N. A(5). Period IIA.

Cf. PETRIE, *op. cit.*, pl. XXVII, No. 45.

No. 11. A fragment of a spearhead having probably a triangular blade with projecting shoulders and a cylindrical socket. [Also pl. XXVI, No. 14]. Length 127 mm., breadth 33 mm., diameter of socket 19 mm. No. 198. No details.

Cf. PETRIE, *op. cit.*, pl. XXXVII, No. 4.

Caltrops

A pair of caltrops was one of the most notable finds at Nasik. After Sisupalgarh,[1] it is the second site to yield these objects of warfare, and would take their antiquity earlier by at least four centuries.

Caltrops were spread on the road with the purpose of offering an obstruction to the progress of the horses and elephants of enemies. According to Dr. WHEELER, " Caltrops occur on the Roman military sites of the early centuries A.D. in Western Europe ". They were also used in the First and the Second World Wars.[2]

Though caltrops at Sisupalgarh have been ascribed to c.A.D. 200-300, at Nasik they were recovered from Layer (5) which is assigned to Period IIA, that is between 200-300 B.C. Another point to be noted is that the Nasik specimens, unlike those at Sisupalgarh, have perfectly tapering and sharp pointed spikes. Inspite of this feature, when thrown on the ground they rest on it with one spike always pointing upwards. [Fig. 52] :

No. 15. A heavily rusted caltrop with three radiating spikes intact, and one broken. [Also pl. XXVI, No. 8]. Length of the spikes 26, 32 and 33 mm., thickness 8, 10 and 11 mm. No. 5100, MG.N. E(5). Period IIA.

No. 18. Similar to above but somewhat bigger and with only two spikes intact. Length of the spikes 41 and 43 mm., thickness 12 mm. No. 5100a, MG.N. E(5). Period IIA.

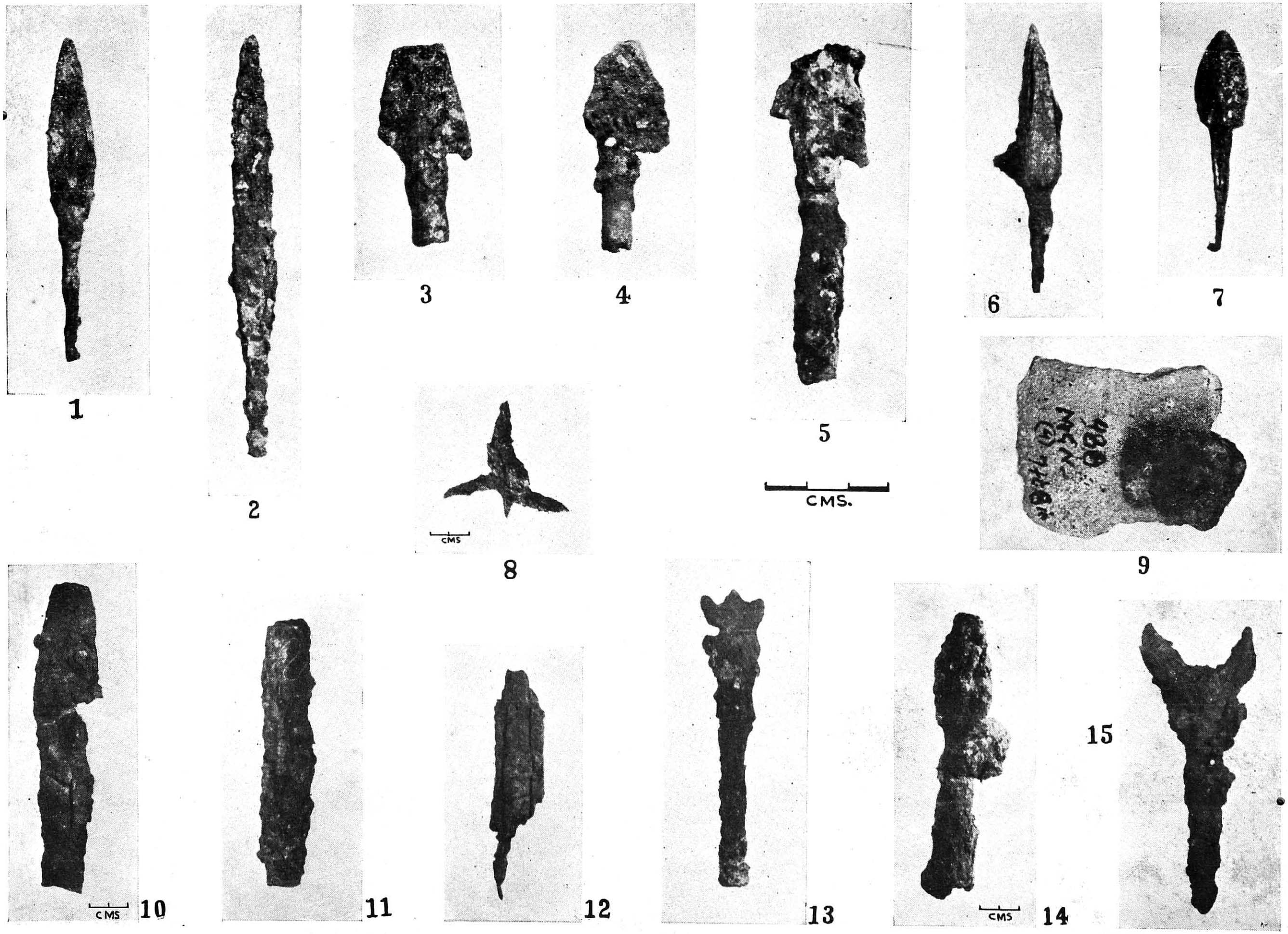
Choppers

Three specimens, most probably of choppers with broad blades and indicating tangs were recovered. Two belong to Period IIA, the third is without details. [Fig. 53] :

No. 1. A heavily rusted piece with less breadth, elongated triangular cross-section, and only a portion of a round socket remaining. [Also pl. XXVII, No. 2]. Length 198 mm., breadth 31 mm., thickness of blade 10 mm., diameter of the socket 16 mm. No. 174b, MG.N.

1. *Anc. Ind.*, No. 5, Jan. 1949, p. 91 ; also, p. 94, Fig. 10, No. 32.
2. *Ibid.*

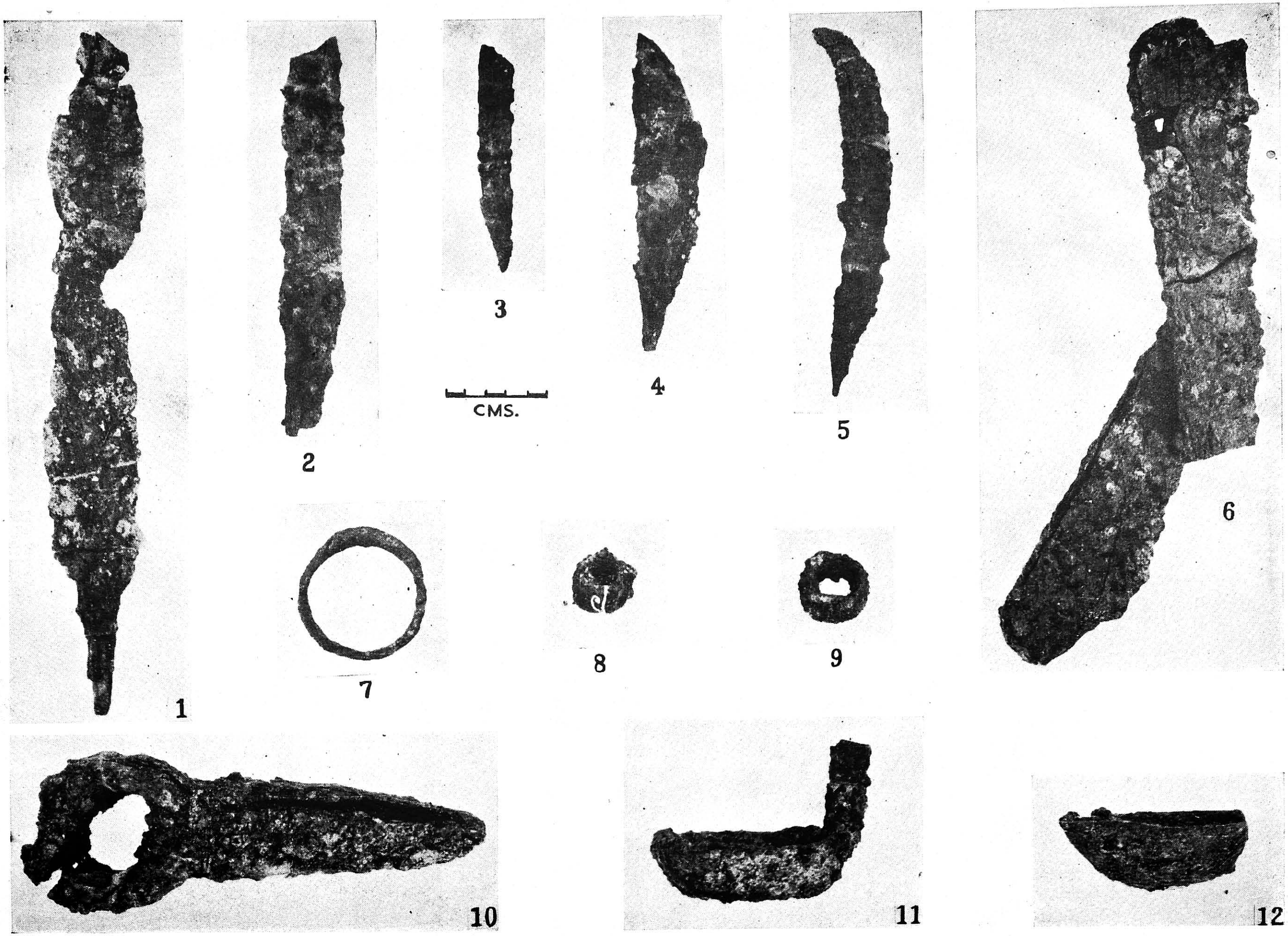
PLATE XXVI



Iron weapons (except No. 9, which is a potsherd with iron handle (?)). Period II.

(*See pp. 111, 112, 114*)

PLATE XXVIII



Iron objects (7–12) and weapons (1–6). Period II.

(See pp. 112, 113, 115)

No. 2. A heavily encrusted, broken piece of a chopper with only the tapering portion suggestive of a tang; the latter has a rectangular cross-section while the blade has a slightly elongated, triangular cross-section; on one side of the blade a fragment of possibly another chopper blade is embedded due to rust. [Also pl. XXVII, No. 6].

Major piece Length 236 mm. Breadth 54 mm.

Minor piece Length 88 mm. Breadth 41 mm.

No. 174, MG.N. A(5). Period IIA.

No. 3. Only a fragment of a chopper blade similar to above. Length 135 mm. Breadth 56 mm. No. 627, MG.N. D(5). Period IIA.

Knives

Out of the nine specimens recovered, only three are intact and the rest fragmentary. In the case of three no details could be had, while all the remaining six belong to Periods IIA and B.

On account of heavy encrustation, it was difficult to ascertain the exact shape of many of these specimens, but a curved blade with a rectangular tang seems to have been the common type. [Fig. 54] :

No. 1. An intact and long blade, probably of a long knife with a comparatively short tang and a rounded tip ; the blade has an elliptical-triangular cross-section. [Also pl. XXVII, No. 1]. Length 340 mm., breadth 47 mm. No 90h, No details.

No. 2. A heavily encrusted knife-blade plano-convex in outline and with an elongated triangular section; tang partly broken. [Also pl. XXVII, No. 4]. Length 156 mm., breadth 35 mm. No. 90, K.W.N. B(6) (x). Period II.

No. 3. A broken fragment of a knife-blade with the tip broken and the tang intact; cross-section indeterminate due to crust. [Also pl. XXVII, No. 3]. Length 150 mm., breadth 17 mm. No. 90c. No details.

No. 4. Heavily encrusted concavo-convex knife-blade with an upturned tip and a short tang. [Also pl. XXVII, No. 5]. Length 193 mm., breadth 25 mm. No. 90a, MG.N. A(5). Period IIA.

Cf. Sankalia and Dikshit, *Excavations at Kolhapur*, Fig. 26, p. 127.

No. 5. A broken part of a knife-blade with both the tip and the tang broken; cross-section elongated triangular.

Length 95 mm., breadth 24 mm. No. 90b, MG.N. D(4). Period IIB.

The unillustrated specimens are four—all fragments of tips of knife blades. Out of these, three came from Layer (5) i.e. Period IIA, and in the case of one details are lost.

Tang Fragments

Eleven tang fragments were found, out of which eight belong to layer (5), one each to layers (4) and (3), and one lacks details. Tanged blades, therefore, seem to be a feature of Period II.

Axe [Fig. 52]

Its shape exactly resembles a modern one.

No. 12. A heavily rusted, socketed, iron axe with a transverse break at the socket. [Also pl. XXVII, No. 10]. Length 192 mm., length of blade 130 mm., thickness 43 mm., max. breadth 68 mm., outer diameter of socket 65 mm., thickness 19 mm., breadth 54 mm. No. 194, MG.N. C(5). Period IIA.

Cf. PETRIE, *op. cit.*, pl. IX, No. 14.

Drill [Fig. 52]

No. 17. A heavily rusted drill with probably a round body and a sharp tapering point. [Also pl. XXVI, No. 12]. Length 54 mm., thickness 11 mm. No. 879a, MG.N. E(5). Period IIA.

Cf. PETRIE, *op. cit.*, pl. XLV, No. 36.

Chisel [Fig. 52]

No. 16. A heavily rusted specimen with a circular section at the top, and with the end bevelled and flattened to a straight sharp edge. [Also, pl. XXVI, No. 11]. Length 63 mm., thickness 10 mm. No. 879, MG.N. C(5). Period IIA.

Cf. PETRIE, *op. cit.*, pl. XXII, No. 78.

OBJECTS OF HOUSEHOLD USE

Besides tools and weapons, were found a lamp or a ladle, an iron cup and iron nails. The lamp belongs to Period IIA and was found in a big storage jar. In the case of the cup, details are lost.

Lamp or Ladle [Fig. 52]

No. 13. A heavily rusted, shallow, flat-based cup-like iron object with a broken vertical handle having a rectangular cross-section; on the margin of the cup opposite to handle there is a broken facet which perhaps indicates the wick-projection (if the object is taken to be a lamp), or a projection for pouring (if it is a ladle). [Also pl. XXVII, No. 11]. Outer diameter of the cup 91 mm., breadth of the sides of the cup 28 mm., length of the handle 40 mm., breadth 19 mm., thickness 8mm. No. 426a, MG.N. B(5). From the second eastern storage jar (Ranjana). Period IIA.

Cup or Ladle [Fig. 52]

No. 14. A heavily rusted, partially broken iron cup (probably a part of ladle), with two perforations which might have been used for revetting. [Also pl. XXVII, No. 12]. Diameter 87 mm., thickness 4 mm., height 36 mm. No. 425a. No details.

Iron Rings

Five specimens of these were found, out of which three were intact and two fragmentary. They seem to have been current in Periods II to IV. [Fig. 53].

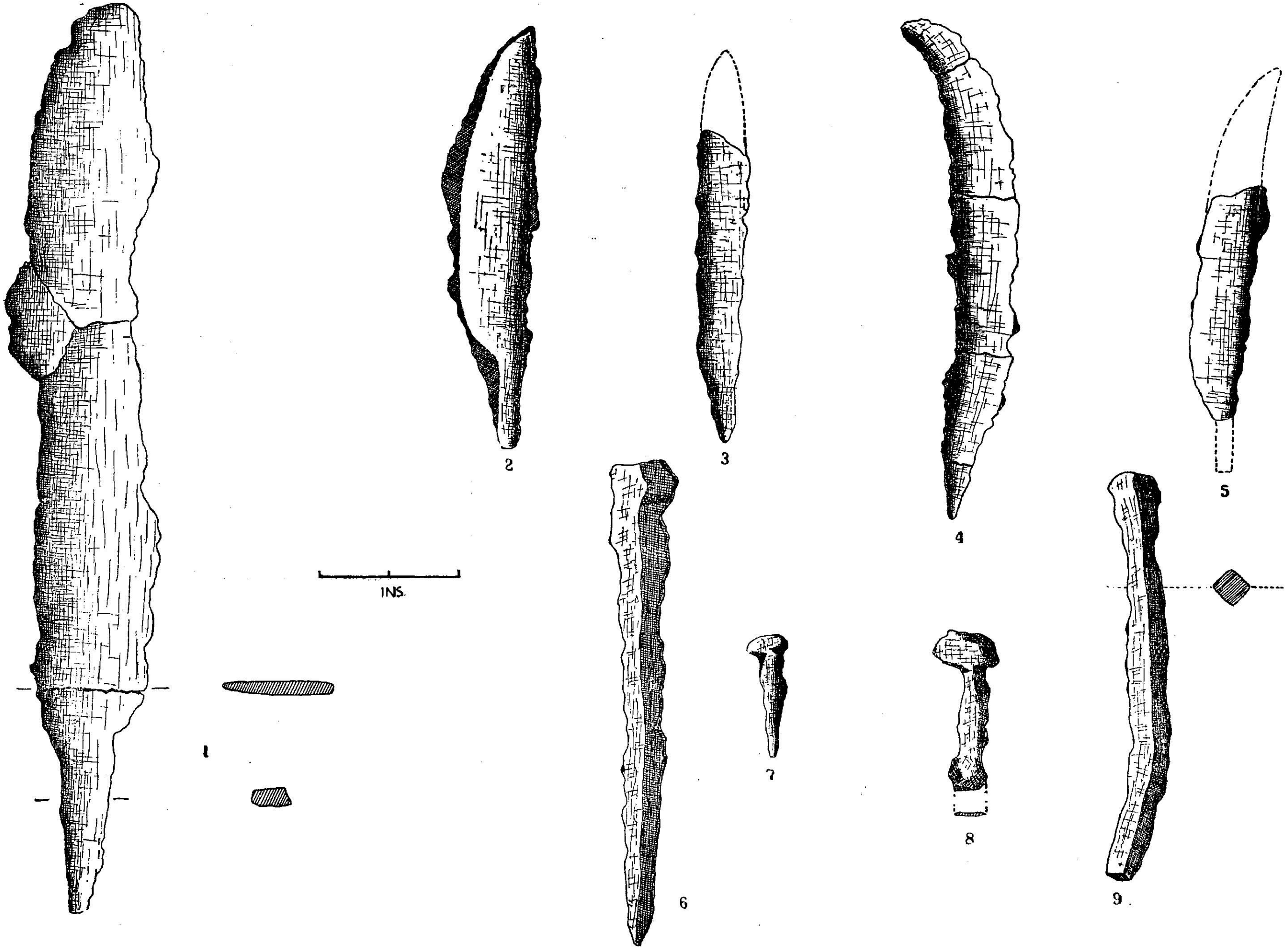


Fig. 54. Knives and Nails

(*See pp. 113-115*)

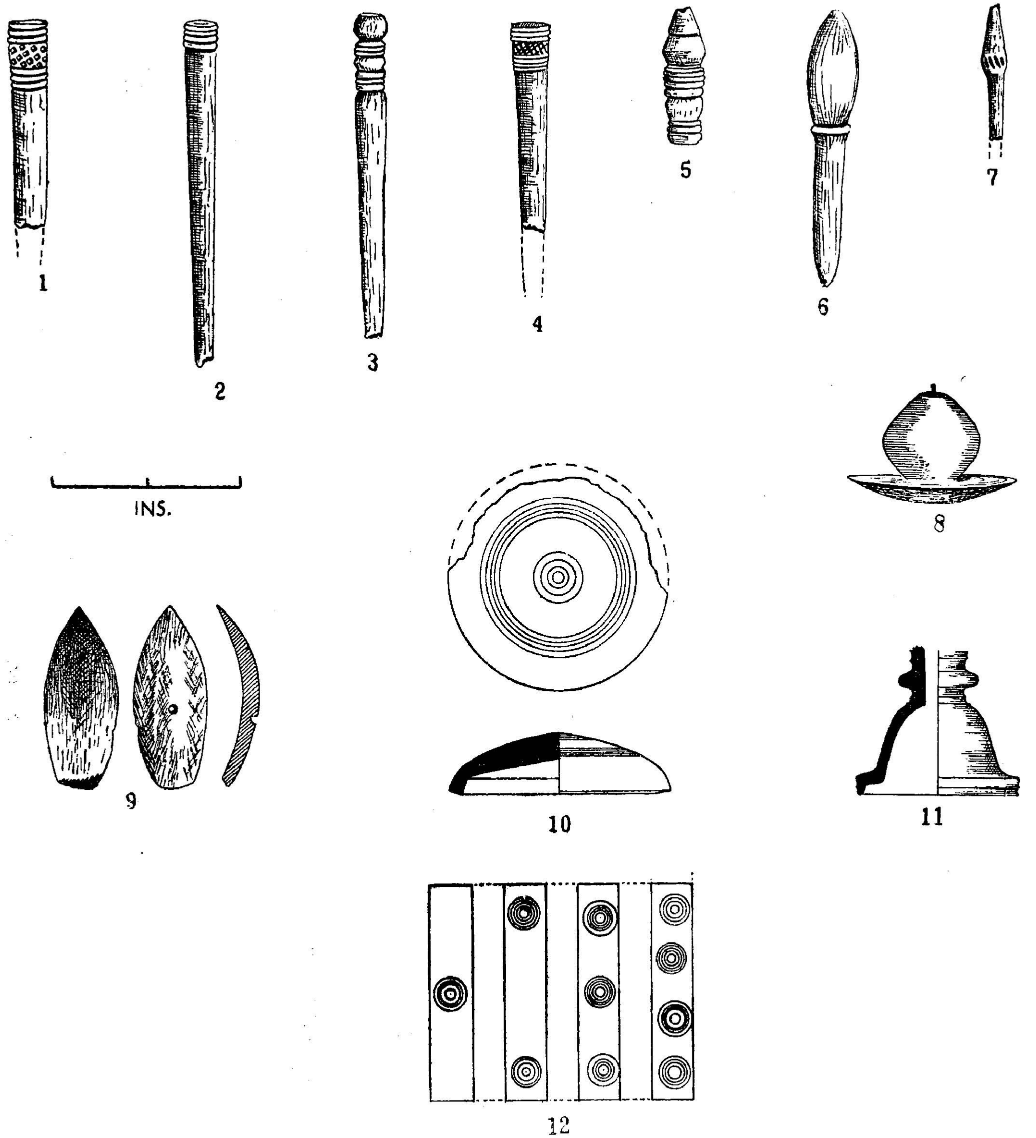


Fig. 55. Kohl sticks, Steatite objects, Ivory dice

(*See pp. 119, 120, 121*)

No. 4. A heavily rusted iron ring (may be a bangle), with irregular thickness, and flattened inner surface. [Also pl. XXVII, No. 7]. Diameter 65 mm., max. thickness 9 mm., minimum thickness 5 mm., No. 789a, K.W.N. d2(2). Period III-IV.

No. 5. Rusted iron ring with broad sides [Also pl. XXVII, No. 8]. Outer diameter 31 mm., breadth of sides 18 mm. No details.

No. 6. Similar to above but more intact. [Also pl. XXVII, No. 9]. Outer diameter 32 mm., breadth of sides 19 mm. No. 426, MG.N. D(4). Period IIB.

Nails

In all, twelve fragmentary and twenty-eight intact nails were found. Out of the latter, twenty-three belong to Period IIA.

The intact specimens may be grouped into three main types :—(a) With a flat head and rectangular cross-section, (b) Elongated rectangular cross-section and convex head, (c) With a flattened convex head and a thin flat body.

Type	Total	Period	Max. Length	Min. Length	Max. Thickness	Min. Thickness
(a)	19	IIA 15 III-IV 2 2 Unstratified	185 mm.	34 mm.	25 mm.	13 mm.
(b)	7	IIA 6 III-IV 1	95 mm.	65 mm.	28 mm.	10 mm.
(c)	2	IIA 2	56 mm.	56 mm.	21 mm.	10 mm.

Out of the twelve fragmentary pieces, nine (Nos. 198, 198a, 250, 501, 501a, 601, 607, 617, 617a) belong to Period IIA.

One belongs to Period IIB. [No. 684. MG.N. (4)].

One to Period IV. [No. 455. MG.N. (3)], and in the case of No. 150a, no details could be had.

It seems clear from the above classification that nails were very much in use in Period II at Nasik.

The illustrated specimens are as follows [Fig. 54] :

No. 6. A heavily rusted, long nail, straight but tapering, with a rectangular section and flat head (Type a). Length 185 mm., thickness 25 mm. No. 22, MG.N. A(5). Period IIA. [Also, No. 9].

No. 7. A short nail with a tapering body, squarish section, and a flat circular head (Type a). Length 44 mm., thickness 15 mm. No. 18a, MG.N. D(5). Period IIA.

No. 8. A flat iron nail with one end thin, convex and projecting, and the other broken (Type c). Length 56 mm., thickness 21 mm. No. 762, MG.N. D(5). Period IIA.

Indeterminate Objects

The rest of the objects—six in number—were fragmentary and heavily encrusted beyond recognition. Only one of them (No. 631) had some definite shape but its purpose is indeterminate. [Fig. 53] :

No. 7. A rusted, broken, long tanged iron object with a shallow trident-shaped head [Also pl. XXVI, No. 13]. Length 71 mm., breadth of the head 15 mm. No. 631 MG.N. E(5). Period IIA.

XII

STONE OBJECTS

A large number of mullers and querns formed the bulk of stone objects found at Nasik. The other stone objects were merely fragments, either polished or otherwise. Some of the former might have been used, probably, as blade sharpeners, and the latter are of indeterminate use. Hence only the mullers and querns are described in detail below.

Querns and Mullers

Twenty-four mullers [*Marathi, varavanṭā*] and sixteen querns [*pāṭā*] were found. A majority among them were fragments.

Mullers

Among the mullers, nearly two-thirds are made of red sandstone, the rest are of basaltic trap. They fall into two main types : (a) Cylindrical, (b) Oval.

The former variety is represented by twenty specimens out of which five are intact. These can be further sub-divided into three sub-varieties :

(i) Perfectly cylindrical with a round section,

(ii) Cylindrical with slightly double concave middle portion,

(iii) Cylindrical but with the middle portion broader than the ends.

Twelve belong to Period IIA, and eight to IIB.

The specimens of the variety (b) are made only of trap, and their thick surface at the circumference shows traces of battering or hitting at something. Out of the four, two belong to Period IIA and two come from the layer of Period IV of MG.N.

Saddle-querns

Along with these twenty-four mullers, sixteen saddle querns were recovered, which reveal a preference of trap to sandstone.[1] Only one intact specimen was found; the rest were fragments.

A majority of these have one end projected with a view to let any pounded material fall into a dish kept below the projection. These ends are either rectangular or rounded, the latter invariably associated at Nasik with the decorated variety. Out of the thirteen undecorated specimens, ten come from the layers (4) and (5) of Period II at MG.N., and the rest from the disturbed top layers of K.W.N. and MG.E.N. They vary in breadth from 65 mm. to 190 mm. Another feature is that these have either a flat or a concave surface, and either perfectly rectangular or a slightly thinned middle portion. Out of the four decorated specimens [Nos. 349, 474, 477 and 753], the first three came from the layers of Period II at MG.N., and the last from the disturbed top layer of MG.E.N. It is uite likely that the latter belonged to earlier layers. No. 474 has no other decoration except a number of random linear incisions. The others have Buddhist symbols.

The following are illustrated [pl. XXVIII.]

No. 1. Complete quern and muller, both of trap, the surface of the former slightly concave and smooth, one end projecting, thinner in the middle; the muller is perfectly cylindrical with flat ends. Length of the quern 420 mm., breadth 180 and 190 mm., length of the muller 230 mm., diameter 65 mm., Nos. 245 and 152 respectively, MG.N. B(5) and (4). Periods IIA and IIB respectively.

No. 2. A fragment of quern bearing on its red sandstone surface a pair of Triratna symbols which contain in between them probably a Svastika with rounded arms flanked by a pair of linear designs. The whole panel is enclosed by an incised line.

Length 181 mm., breadth 170 mm., thickness 53 mm. No. 477, MG.N. B(5). Period IIA.

No. 3. Fragment of the rounded projecting end of a sandstone quern having on its smooth and polished surface a crescent-shaped incised dotted portion over which is embossed the figure of the Buddhist Triratna. The latter is polished and smoothed so as to stand out in relief over the rough crescent-shaped portion. Thickness 39 mm. No. 349, MG.N. A(5). Period IIA.

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1. It may be noted here that sandstone is absent near Nasik, hence it is likely that the material was brought from outside.

No. 4. An oval-shaped muller of trap with traces of battering on the thickness at the circumference. Length 96 mm., breadth 86 mm., thickness 57 mm. No. 223, MG.N. F(5). Period IIA.

No. 5. Possibly a fragment of a quern with one surface somewhat smooth and the other having embossed and thick arches in relief over which there is a Triratna symbol. Length 104 mm., breadth 123 mm., thickness 31 mm. No. 753, MG.N. (1). Period IV.

XIII

OBJECTS OF BONE, IVORY, STEATITE AND SHELL

SHELL OBJECTS

Besides various types of shells, (see Appendix III) six objects made out of shell were recovered.

Of these six, four were perforated shells used, most probably, as pendents or for similar purpose. The rest were big and thick shells. The peculiarity of the latter variety was that one out of them had definite traces of copper rivetting at one end, while only holes were left at the other end opposite to it. The first impression was that it was a spoon but rivetting on either side came in the way of this identification. It may, however, be noted that rivetted shells were used as head ornaments at Mohenjodaro—a fashion which continued in early historical times and survives in some parts of India even today. For ornaments like these are found in figure sculptures and paintings and are worn by Rajput and Lamāṇa women.

From their occurrence in layer (5), the rivetted shell, big burnt shell, and perforated shells can be ascribed to Period IIA at Nasik. The last variety is obtained in the later period also.

The following objects are illustrated [pl. XXIX]

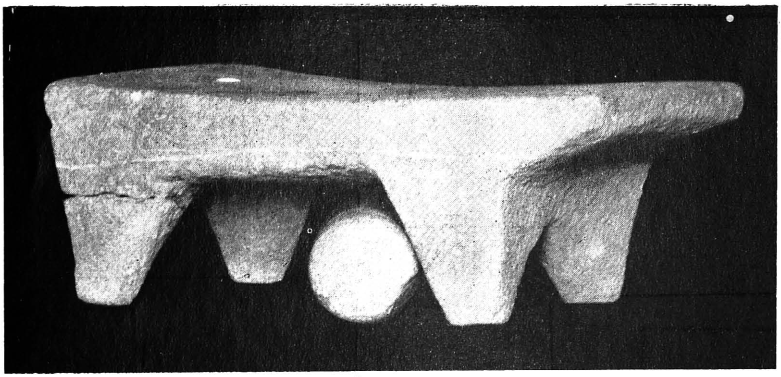
No. 1. A broken half of an oval marine bivalve shell of ivory colour having at one side a pair of rusted copper revetments ; on the opposite edge there are two perforations. Breadth 83 mm. No. 158, MG.N.A(5). Period IIA.

No. 2. A piece of polished shell object of milky white colour with one surface flat and very smooth. No. 479, MG.N. B(5). Period IIA.

No. 5. A fragment of a yellowish piece of shell with two holes indicative of rivetting, [may be a part of No. 1 above]. Length 78 mm., breadth 21 mm. No. 479a, MG.N. A(5). Period IIA.

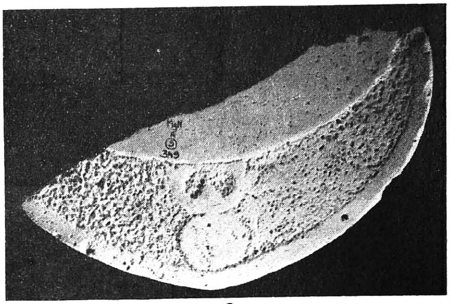
No. 6. A fragmentary shell piece with thin rectangular cross-section, and having seven shallow circular incised holes on one surface ; may be a fragment of a handle of something. Length 23 mm., breadth 11 mm., thickness 4 mm., No. 301, MG.N. G (5). Period IIA.

PLATE XXVIII

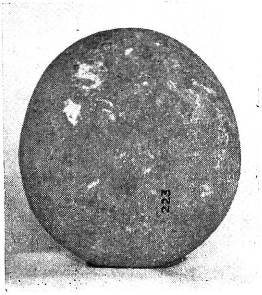


1

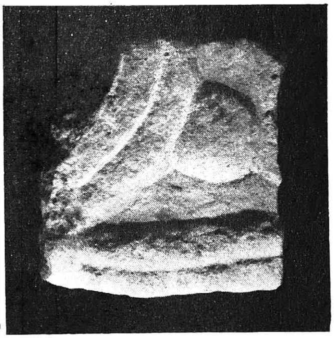
2



3



4

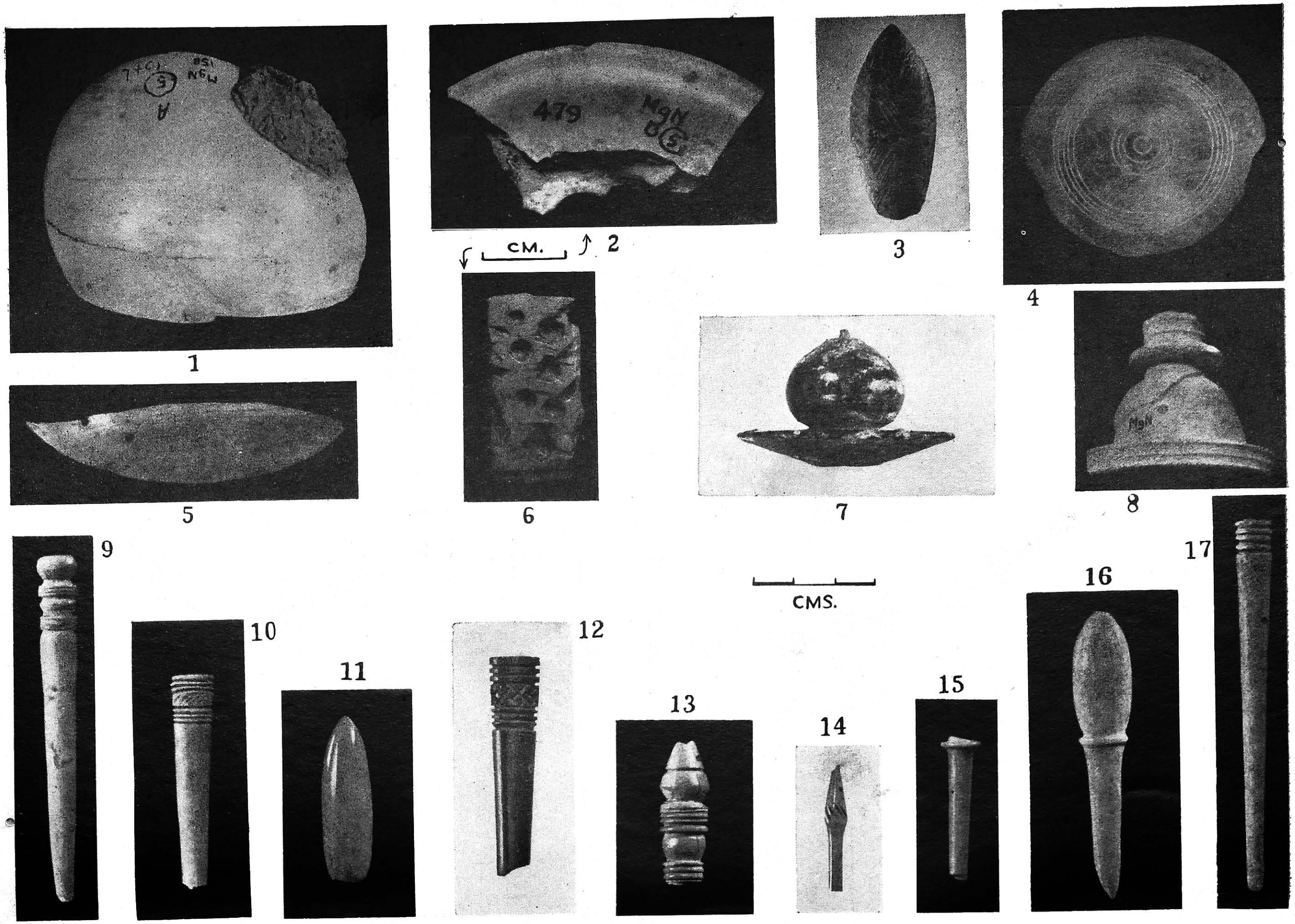


5

Stone objects. Saddle Quern (Pata) (1–3), Stone ball (4), Carved object (5).

(*See p. 117*)

PLATE XXIX



Shell (1, 2, 5–6), Steatite (3, 4, 7, 8) and Bone objects (9–17). Period II.

(See pp. 118, 119, 120, 121)

OBJECTS OF BONE, IVORY, STEATITE AND SHELL

Bone Objects

Only a few bone objects were found and most of them were antimony rods. The others being not important are not illustrated.

Antimony Rods or Kohl Sticks

In all nine Kohl sticks—some complete and some fragmentary—were found. They can be grouped in three types as follows :—

(a) Long tapering sticks with the broader end decorated,

(b) Short sticks with one end tapering and pointed, and the other somewhat elongated bi-convex,

(c) Thin sticks with conical ends.

Kohl sticks were in use in Egypt from early times and have been discovered at Mohenjodaro and Taxila [c.4-3rd century B.C.][1] as also in many Satavahana sites in the Deccan, like Karhad and Kolhapur. At Nasik, most of these belong to Period IV as details in the case of some are lacking. It is quite likely that some of these Kohl sticks belong to the lower layers, i.e. Period II, as earth-grabbers have very much disturbed the layers of Period IV.

The illustrated specimens are as follows [Fig. 55] :—

No. 1. Black polished body, circular cross-section, and having a design of diamonds in relief enclosed by grooves at the broader flat end ; the other end broken [Type a]. [Also pl. XXIX, No. 12], Length 53 mm., thickness 12 mm. No. Z, MG.N. Details not available.

No. 2. Long, polished ashy-yellow body with the tapering end broken, and the other broader end having four grooves round the cylindrical body [Type a]. [Also pl. XXIX, No. 17]. Length 91 mm., thickness 8 mm. No. 127, MG.N. G(2).

No. 3. Similar to above but having a different decoration of grooves and knobs [Type a]. [Also pl. XXIX, No. 9]. Length 85 mm., thickness 10 mm. No. 127A, MG.N. G(2).

No. 4. Similar to above but having a flat broader end with a pair of three incised grooves enclosing a criss-cross design, and an oval cross-section. [Type a]. [Also pl. XXIX, No. 10]. Length 75 mm., thickness 10 mm. No. 112, K.W.N. C5 (2).

No. 5. Probably the ornamented head of a bone Kohl stick with decorations somewhat similar to No. 3 but with a truncated conical end. [Type a]. [Also pl. XXIX, No. 13]. Length 36 mm., thickness 12 mm. No. 127B. MG.N. G(2).

No. 6. Kohl stick with a short body having one end tapering and pointed and the other having an elongated double convex head ; at the junction of the body and the head there is a ring in relief. [Type b]. [Also pl. XXIX, No. 16]. Length 70 mm., thickness 14 mm. No. X, MG.N. Details not availalble.

1. Marshall, *Taxila*, Vol. II, pp. 585-6.

Two fragments of type (b) were recovered [Nos. 122 and 134], the former [pl. XXIX, No. 15] being the portion below the head, but longer and tapering, with a length of 36 mm. was recovered from MG.N. F(2); and the latter [pl. XXIX, No. 11] was only the elongated head with high polish, and 41 mm. in length, recovered from MG.N. B(2).

No. 7. An almost conical piece of a bone Kolh stick, grey in colour, with oblique and parallel incisions round the broadest portion of the head. [Type c]. [Also pl. XXIX, No. 14]. Length 32 mm., thickness 6 mm. No. Y. Details not available.

Other Objects

Only four other objects of bone were recovered—all from layer (5) i.e. Period IIA. They are not very important and hence only summarised below.

Out of the four, two [Nos. 330 and 620] are bored tube-like pieces of bone, 17 and 38 mm. long respectively and of indeterminate use.

Of the rest, No. 216 is a roughly rectangular piece of bone with one end rounded and the other broken, having parallel lengthwise grooves on one surface, 58 mm. in length, 6 mm. in thickness, and 15 mm. in breadth : use, indeterminate.

No. 1576 is a hexagonal piece of bone broken at both ends, with the body tapering at one end, well polished, length 46 mm. ; use not known.

Objects of Ivory

Only a single object of ivory was found, and that is a dice. It is a long cubical piece having sets of five concentric ring-incisions—one set on one surface, two on the opposite ; three on the third and four sets on the fourth surface[1].

Fig. 55, No. 12. Length 57 mm., Breadth 12 mm. No. 328, MG.N. D (2). Period IV.

Steatite Objects

Only a small number of steatite objects was found. Out of six, two are fragmentary. The rest, however, are well-worked objects, with definite shapes like that of a petal or a bell or a lid. Three of these belong to Period IIA. [Fig. 55] :

No. 8. Small lid-like object with a thick arecanut-like knob; on the flattened top of the latter is inserted an iron pin. The underside of the lid is convex. [Also pl. XXIX, No. 7]. Diameter of the base 46 mm., that of the knob 27 mm. No. 832, MG.N. D(5). Period IIA.

1. Cf. specimens from Taxila [of bone] : *Ancient India*, No. 4, p. 81 and pl. XXI, No. 20 ; Rairh [of ivory, bone and stone] : Puri, *Exc. at Rairh*, pl. XXII, 14.

No. 9. A lotus-petal-like object of greenish steatite, smooth and hollowed on the underside, the upperside is convex and is completely worked over bearing tiny, vertical, horizontal and oblique scratches. There is a small hole in the centre; probably the petal is a part of a complete lotus. [Also pl. XXIX, No. 3]. Length 50 mm., breadth 24 mm. No. 261. MG.N. F(5). Period IIA.

No. 10. A steatite lid, greyish black in colour, very smooth, with half the rim broken; the outer surface has sets of five and four concentric rings just round the centre of the top. [Also pl. XXIX, No. 4]. Diameter 61 mm., thickness 3 mm. MG.N. D(5). Period IIA.

No. 11. A bell-shaped hollow object of greyish-blue colour, half broken, having a hole right through the top; the outer surface has very fine grooves both at the top as well as at the base; of indeterminate use. [Also pl. XXIX, No. 8]. Height 44 mm., diameter of the base 51 mm., thickness 3 mm. MG.N. D(1). Period III-IV.

XIV

BONE POINTS FROM NASIK[1]

Three different types of collections of pointed objects of bone, here termed " bone points " for the sake of convenience and in the absence of a more suitable term to cover all forms, were made while conducting excavations at Nasik. The first is a stratified collection from all the localities. The second is a surface collection. The third is a sample collection out of a huge number *in situ*—perhaps a million—lying buried over the layer of natural earth and covered by a thin layer of later deposits. From the associated objects and the nature of the earth this layer seems to belong to Andhra (Satavahana) period. Before indicating their age typologically as well as their types and probable uses the stratified material is first studied and then other collections.

A. Stratified
B. Surface
C. Andhra Workshop site.

A. Stratified Bone Points

An interesting assemblage of bone points and other bone objects came from the stratified layers. Their vertical distribution is shown in the following chart (No. 1). No bone object of any description was recovered from layer below the fifth. This layer (MG.N), however, was the richest not only in number of specimens (nine) but in their variety and workmanship. One will feel tempted to equate the two ball-pointed modelling tools

1. This section is prepared under my guidance by Shri K. D. Banerji, a student working in the Department. [H.D.S.].

with those found from Sirkap layer II or III, or from Bhir mound.[1] But our specimens are much superior in finish and polish. One (No. 246) is painted black and decorated by incised lines. Another point of superiority is in the double ball points, while the Taxila parallels have only one. The ornamented dentilium (No. 5724) was probably used as a bead. No. X was probably a stilus. A peculiarity of the two modelling tools and the stilus was that they show deliberate and rough bevelling opposite the supposed working end. Possibly the bevelling was for attaching them to a handle. Even if it were so they were not originally meant to be so, for their high polish, good finish and superior workmanship are in contrast with the crude, rough bevelling. Their very small length (for a modelling tool or stilus) and rough bevelling suggest that these were not originally meant to be attached to a handle and done so only after the other ends broke. The well polished, partially hollowed specimen (No. 620), will then be the handle for a metal stilus, i.e. with a metal point. No bone point, either of double ended type or of tanged type[2] was found. The fourth layer did not yield any bone tool.

The following specimens are illustrated [Fig. 56]:—

No. x — A roughly worked bone point, probably a modelling tool, retouched at one of the tips, while other tip is broken, cross-section oval, dark brown. 83 mm., 9 mm. MG.N. D(5).

No. 187 — A double, ball-pointed, modelling tool with the other end broken. The ball point is but one projection, supporting another minute one, cross-section oval with flattened sides, honey-brown. Length 90 mm., breadth 11 mm., thickness 7 mm. MG.N. G(5). [Fig. 56, h].

No. 246 — A double ball-pointed modelling tool, with one ball broken, highly polished and painted black having two incised decorations round the body. The other end shows crude bevelling, cross-section circular. 47.5 mm., 7 mm. MG.N. G(5). [Fig. 56, f].

No. 446 — A double-ended bone point, broken at both ends, roughly worked, 96 mm., 9 mm., 7 mm., MG.N. (3).

No. 620 — Probably the handle of a stilus, broken at one end, having circular longitudinal groove at the other, truncated end for the insertion of a part of a metal rod, Dark brown. 38 mm., 9 mm. MG.N. A(5). [Fig. 56, d].

No. 895 — A tanged bone point, unpolished, roughly biconical in outline with ovaloid cross-section, dark brown with ashy white patches. Length 69 mm., length of the tang 16 mm., breadth of body 11 mm., breadth of the tang 5 mm. MG.E.N. Ie(3). [Fig. 56, c].

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1. J. Marshall, *Taxila*, Vol. 2, 660-1, for fig. ref. Vol. 3, 105.

2. The stylistic interpretation is purely tentative as the later layers of MG.N. are known to be disturbed. (H.D.S.).

No. 5724 An ornamented, partially hollow and partially perforated (in continuation of the hollow part) piece of probably the canine of a carnivora, roughly circular in cross-section, slightly bent with diameter increasing from one end to the other, the narrowest end is transversely cut and shows the longitudinal perforation at the centre while the other end is broken and hollow. The piece is ornamented by eight longitudinal ridges running end to end, the gaps between the ridges being filled with incised parallel lines, three in a gap. Length 42 mm., diameter 5-7 mm. MG.N. E(5). [Fig. 56, e][1].

B. Surface Bone Points

Altogether thirty four bone points were found. These belong to both the varieties, i.e. double-ended and tanged. The double-ended varieties are in majority with twenty four (70.61%) specimens.

These points vary but little from those described above; while the tanged specimens are the exact duplicates of some of the specimens from the factory site, the double-ended specimens from the two sites differ fundamentally. The main difference is in size, shape and the texture. The specimens from the surface, excepting the three tanged specimens, do not give any metallic sound, whereas every specimen from the factory site gives such a sound. In colour also the variation is there. But for the three above mentioned specimens, all are of light brown colour or its variation, while those from the factory sites are ashy or even milky-white in colour. The measuremental difference between the three groups are shown below:—

Site	Type A (double-ended)		Type B (tanged)			
			Length variation		Breadth variation	
	Length variation	Breadth variation	Body	Tang	Body	Tang
Stratified layers	39—86 mm. mainly from 60—64	7—12 mm. majority 8 mm.	53 mm.	16 mm.	11 mm.	5 mm.
Surface	54—99 mm.	7—12 mm. mainly 10 mm.	42—68 mm.	—	7—10 mm.	—
Andhra Factory	35—100 mm.	4—10 mm.	28—83 mm.	13—25 excepting one 28 one 34 one 7	5—11 mm.	4—7 mm. mainly 5—6

Since many of these are similar to those from the Andhra workshop, only one is illustrated; the rest are merely described. Type, M. 48 D, [Fig. 56, i].

No. 48A A double-ended bone point, slightly polished elongated biconical in shape with a circular cross-section, light brown. 64 mm., 10 mm.

1. It is very probably a Dentelium Shell (H.D.S.).

No. 48A2 A double-ended bone point, with little or no polish, similar to No. 48A, yellowish brown. 72 mm., 11 mm.

No. 48A3 A double-ended point, both ends broken, rougher in make, otherwise similar to No. 48A. 64 mm., 9 mm.

No. 48A5 A double-ended bone point, with rougher flakings, yellowish brown, otherwise similar to No. 48A. 64 mm., 8 mm.

No. 48A6 A double-ended bone point, broken at half, medium brown in colour with occasional patches, otherwise similar to No. 48A. 54 mm., 10 mm.

No. 48B1 A double-ended bone point, partially polished, elongated biconical in shape with almost circular cross-section, light yellowish brown with dark brown patches. 95 mm., 10 mm., 8 mm.

No. 48B2 A double-ended point, narrower and more elongated than and otherwise similar to No. 48B1. 95 mm., 10 mm., 7 mm.

No. 48B8 A double-ended point, much worn out, otherwise similar to No. 48B. 74 mm., 9 mm., 7 mm.

No. 48C1 A double-ended point, unpolished, ends broken, roughly biconical in outline with roughly triangular cross-section, colour light brown. 68 mm., 7 mm.

No. 48D1 A double-ended point, worn-out, broken at one end, elongated biconical in outline with oblong cross-section, dark brown with ash-white patches. 97 mm., 11 mm., 6 mm., comparatively fresh as spongy part of the bone is still visible [Fig. 56, i].

No. 48D A double-ended point, roughly worked, elongated biconical in outline, cross-section rectangular with rounded sides, colour dark-brown with ash-brown patches. 85 mm., 10 mm., 5 mm.

No. 48E1. A double-ended point, elongated biconical in outline with plano-convex cross-section, yellowish brown with dark-brown patches, a slanting slit on one side of the body. 78 mm., 10 mm., 6 mm.

No. 48F1. A double-ended point, roughly flaked, elongated diamond shaped, with oval cross-section, yellowish brown. 61 mm., 11 mm., 7 mm.

No. 48X3 A tanged bone point, roughly made, almost unpolished, elliptical cross-section, colour light brown. Body 55 mm., 10 mm., 7 mm., tang 9 mm., 5 mm., 4 mm.

No. 48X6. A tanged bone point, tang broken at the root, roughly triangular in cross-section, comparatively brown. 67 mm., 9 mm., 9 mm.

No. 48Y2 A tanged probably *wooden* point, broken at the base near the tang, broad oval cross-section. Attempt to make a subsequent tang visible. 50 mm., 8 mm., 7 mm.

C. Bone Points from the Andhra Workshop

This sample collection is insignificant in number when compared to the vast number of specimens left at the place (See pl. III c). The sample, however, contained 17868 broken pieces and 1499 workable specimens. The latter was worked upon thoroughly and classified. All these specimens, including the broken ones show signs of flaking and some of polishing. A high metallic sound is given by all these specimens. Contrary to the expectation, the collection does not show specimens in different stages of

production, in a sufficient degree. At least 84 finished specimens and 131 broken pieces show clear signs of burning. All the specimens vary extremely in shapes and sizes. In fact the variation is so much that it is difficult to bring them together in any number of groups or sub-groups.

Allowing, therefore, a considerable variation among specimens in a particular group the following classification can be made. Primarily they are divided into two broad types.

(A) Double-ended points.

(B) Tanged points.

Type A. Double-ended Points

The common character of this group is that all specimens have both ends pointed. In most of the cases the anterior and posterior end cannot be differentiated. In hundred and four specimens the difference can be marked, one end being more tapering than the other. The broadest part of the specimens is at or near the centre. But specimens having flat cross-section generally are uniformly thick, tapering suddenly at either end (the breadth, of course, decreases from centre to the point).

The shapes, sizes, and finish of the specimens differ so much that it is only possible to sub-classify them broadly. The classification, however, is based on shape only, for the variation of size is too great to be accounted. Since the classification is irrespective of the size of the specimens, slight change of shape due to the disconformity in lengths and breadths is visible in one group. In this connection it may be stated that specimens with greatest length in a group hardly, if ever, correspond to the greatest breadth. The variation of the measurements will be shown in a tabular form along with other information in Chart No. 2.

Sub-type I Nos. 17, 18.	Straight, with tapering pointed ends polished or unpolished, section at the centre varying from biconvex to circular.
Sub-type II Nos. 19, 20, 25.	Bow-shaped, bent body, tapering pointed ends, partly polished or unpolished, section in the centre flat to round. This group contains some of the best finished specimens.
Sub-type III. Nos. 21, 22.	Body bent back as in S-twist, ends pointed, partly polished or unpolished, section at the centre biconvex to circular.
Sub-type IV. Nos. 23, 24.	Straight or almost straight body, pointed at either end, but bent on one, partly polished or unpolished, section at the centre biconvex to circular.

Sub-type V.	Almost straight, i.e. slightly bent specimen corresponding to a much lesser degree to the sub-types II, III and IV, partly polished and unpolished, section in the centre biconvex to circular.
Sub-type VI. Nos. 21, 27, 28.	Miscellaneous group of peculiar shapes.

Type B. Tanged Points

Points of this group are all tanged. Both the body and the tang are pointed though the tang mostly ends in a sharper point. In eleven cases secondary facets to refashion the tang are visible.

In shape and finish this group is superior to the double-ended points. The variation of measurements also are not so much as in Type A (double-ended) specimens. So these specimens can be grouped measurementally to a certain extent. Unpolished specimens are comparatively much rarer, though partly polished specimens are abundant. Most of the specimens, however, are polished all over, even though slightly.

For the convenience of description a tanged specimen is divided into the two component (inseparable) parts—the body and the tang. The former is necessarily broader than the tang and the root of the tang and the base of the body is completely separated by a surface (in most cases flat). The broadest part of the body is not necessarily in the centre but may also be at the base.

The tanged specimens are further classified as follows. This depends mainly on shape and not on size, though measuremental groupings will be shown in tabular form in Chart No. 3.

Sub-type I Nos. 1, 2, 3, 4.	Straight, conical or one end truncated, biconical body with a comparatively thinner conical tang, section varies from broad oval to circular.
Sub-type II Nos. 6, 7.	Body and tang curved in one way, both tapering to a point, section varying from biconvex to circular.
Sub-type III Nos. 8, 9.	Straight body tapering to a point with a bent tang, section from elliptical to circular.
Sub-type IV Nos. 10, 11.	Slightly bent body, tapering to a point with bent conical tang section from biconvex to circular.
Sub-type IV Nos. 14, 15, 5.	Body and tang bent in opposite directions, as in S-twist, section oval to circular.
Sub-type VII Nos. 29, 30, 31, 32.	Miscellaneous types of peculiar shapes.
Sub-type VIII	A group intermediate in character. Chart 3 shows the relation between groups.

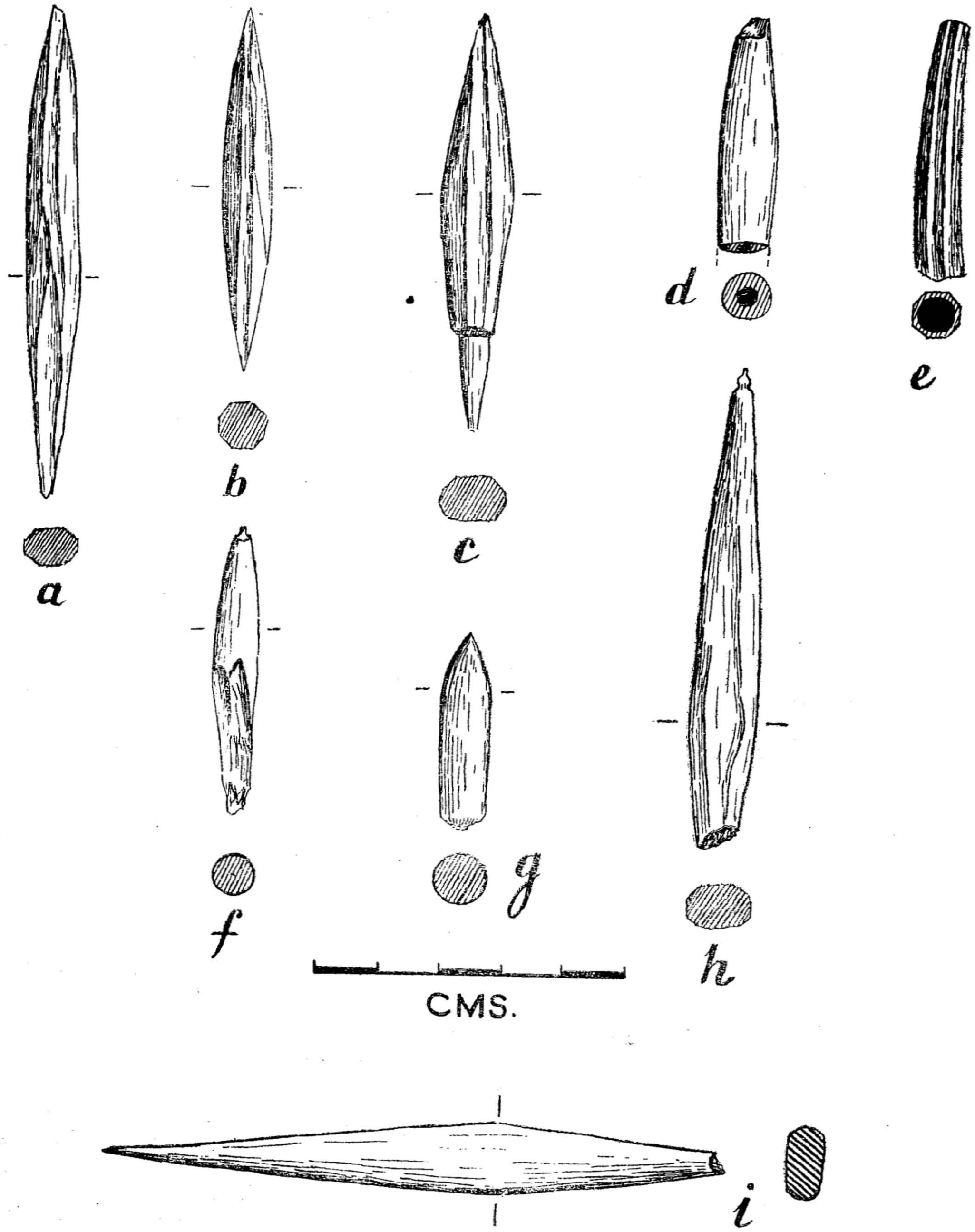

Fig. 56. Bone Points, Surface and Excavated, excepting (e), Dentilium Shell.
(*See p. 122*)

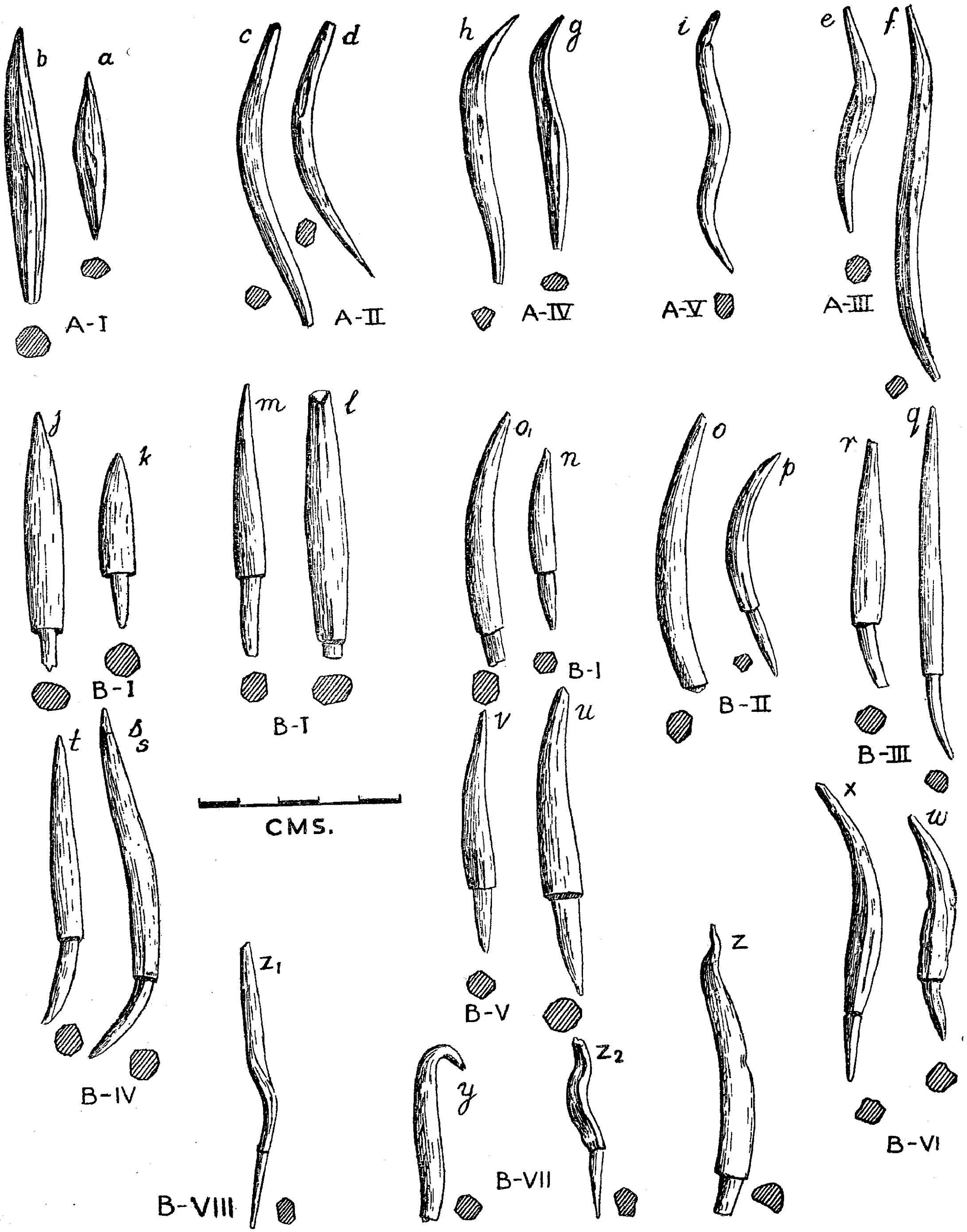

Fig. 57. Bone Points from Andhra Workshop.

(*See pp. 127-128*)

[The following specimens are illustrated.]

Double-ended points [Fig. 57].

No. 17. A double-ended bone point, polished, biconical in outline, section roughly oval, colour light brown. 42 mm., 7 mm. [Fig. 57, b].

No. 18. A double-ended bone point, partly polished, broken at one end, roughly biconical in shape, section triangular with rounded sides. 69 mm., 7.5 mm. [Fig. 57, a].

No. 19. A double-ended bone point, curved like a bow, one tip unturned while the other broken, section roughly circular, colour yellowish white with brown patches. 78 mm., 6 mm. [Fig. 57, c].

No. 20. A double-ended point, polished, curved body, one tip broken, section flattened ovoid, colour ash white with brown patches. 62 mm., 6 mm. [Fig. 57, d].

No. 21. A double-ended point, partly polished, bent in the form of S, section circular, colour ashwhite with brown patches. 56 mm., 6 mm. [Fig. 57, e].

No. 22. A double-ended point, almost similar to No. 21 but more elongated body with broad oval section. 95 mm., 5 mm. [Fig. 57, f].

No. 23. A double-ended bone point, polished, body straight with one end bent, section ovoid, colour ash white, 58 mm., 4.5 mm. [Fig. 57, g].

No. 24. A double-ended point, almost similar to No. 23, bent point more projecting, section roughly triangular. 68 mm., 6 mm. [Fig. 57, h].

No. 25. A double-ended point, worn out, points broken, body resembles the double bent shape of a classical bow, section dumbbell-shaped, colour ash brown. 68. 5 mm., 6 mm. [Fig. 57, i].

Tanged points

No. 1. A tanged bone point, polished, tip of the tang broken, cylindrical body with conical tip, section circular throughout, colour ash white with brown patches. (Body) 31 mm., 8 mm.; (tang) 9 mm., 4 mm.

No. 2. A tanged bone point, polished, tip of the tang broken, body elongated conical, tang elongated conical, section of the body oval and of the tang roughly circular, colour light yellowish, surface at the root of the tang more or less flat but unevenly made. (Body) 56 mm., 10 mm.; (tang) 8.5 mm., 4 mm. [Fig. 57, j].

No. 3. A tanged bone point, slightly polished, most of the tang and the tip of the body broken, roughly elongated biconical in shape, section of the body and the tang oval, colour ash white. (Body) 64 mm., 10 mm.; (tang) 4 mm., 4 mm. [Fig. 57. m].

No. 4. A tanged bone point, roughly polished, tip of the tang broken, slightly bent body, elongated conical in shape, section of the body varies from circular at the base, triangular at the middle to elliptical at the point, colour ash white. (Body) 48 mm., 8 mm.; (tang) 21 mm., 5 mm. [Fig. 57, l].

No. 5. A tanged bone point, partially polished, slightly bent body plano-convex in outline, conical tang, section varying from circular at the base to oval at the centre and elliptical at the tip, colour ash white with brown patches. (Body) 31 mm., 6 mm.; (tang) 14 mm., 4 mm. [Fig. 57. n].

No. 6. A tanged bone point, roughly polished tang completely broken, body slightly curved, section roughly circular, colour ash white. (Body) 70 mm., 8 mm. [Fig. 57, o].

No. 7. A tanged bone point, unpolished, curved body and tang, both circular, colour ash white. (Body) 6 mm., 3 mm. [Fig. 57, p]

No. 8. A tanged bone point, polished, body elongated cylindrical with conical tip, tang slightly bent, section of the body and the tang roughly circular, colour ash white with brown patches. (Body) 68 mm., 6 mm.; (tang) 23 mm., 3.5 mm. [Fig. 57, q].

No. 9. A tanged bone point, slightly polished, tip of the body and that of tang broken, body roughly elongated biconical in shape with one end truncated, tang is curved, section of the body ovaloid and of the tang roughly circular, colour brownish white. (Body) 48 mm., 6 mm.; (tang) 11 mm., 4 mm. [Fig. 57, r].

No. 10. A tanged bone point, polished, body slightly bent with roughly triangular cross-section, with rounded sides while the tang is curved with circular section, colour ash white with brown patches. (Body) 69 mm., 6.5 mm. Max. breadth (tang) 4 mm. [Fig. 57, s].

No. 11. A tanged bone point, partially polished, body slightly bent with oval section; tang, bent from the root, with circular section, colour yellowish brown. (Body) 53 mm., 7 mm., Max. breadth (tang) 4 mm. [Fig. 57, t].

No. 12. A tanged bone point, polished, body slightly bent with oval section, tang almost straight with roughly circular section, colour ash white with brown patches. (Body) 66 mm., 11 mm., (tang) 22 mm., 5 mm., [Fig. 57, u].

No. 13. A tanged bone point, section of the tang and body circular, otherwise similar to No. 12. (Body) 46 mm., 8 mm. (tang) 16 mm., 5 mm. [Fig. 57, v].

No. 14. A tanged bone point, unpolished, broken at the tips of body and tang, elongated S shaped body, section roughly circular, colour light yellowish brown with dark brown patches. (Body) 42 mm., 6 mm.; (tang) 16 mm., 4 mm. [Fig. 57. w].

No. 15. A tanged bone point, almost similar to No. 14, (Body) 59 mm., 6 mm., (tang) 16 mm., 3 mm. [Fig. 57, x].

No. 16. A tanged bone point, polished, tang broken at half, body bent, tang straight, section of tang and body plano-convex, colour ash white. (Body) 55 mm., 9 mm., (tang) 7 mm., 5 mm. [Fig. 57, o_1].

No. 29. A double-ended (perhaps also tanged) bone point, one end hook-shaped and the other broken, section roughly circular, colour ash brown, 45 mm., 6 mm. [Fig. 57, y].

No. 30. A tanged (perhaps also double-ended) bone point, polished, body peculiarly twisted, tang slightly bent, section roughly triangular with rounded sides. 62 mm., 8 mm., (tang) 4 mm.

No. 31. A tanged (perhaps also double-ended) bone point, polished, body flattened and curved, tang has conical outline, section oblong, the groove round the body not complete. (Body) 54 mm., 6 mm., tang 19 mm., 3 mm. [Fig. 57, z_1].

No. 32. A bone point, intermediate between double-ended and tanged, the groove round the body not complete, section oval, body twisted. 45 mm., 5 mm. [Fig. 57, z_2].

Construction of the Points

Though there are a large number of specimens, we have comparatively a few showing different stages of production. However, some idea can be had of a few stages of production. These are pointed out below :—

Type A Double-ended points.

Stage I. A piece of long, narrow bone is taken. It is then worked by a chisel to bring the whole piece to somewhat a cylindrical shape.

Stage II. The piece is then worked from the central region to give the whole piece a biconical appearance.

Stage III. The piece is then polished to rub off chisel marks. This completes the construction of Type A specimens.

Type B. Tanged points.

Stage I. The specimens necessarily undergo the first stage as in the case of Type A specimens. Some pieces even undergo the second stage.

Stage II. Then on one side of the piece a groove is made round the body and then chiselling the whole end beyond the groove, that part of the body is made thinner and conically elongated.

Stage III. After getting the tang conically elongated the body is made.

Stage IV. The piece is then polished and the specimen is completed.

As said before, the construction may undergo the second stage of construction of type A specimens. Here the tang is made out from one end by chiselling and most probably the operation is not preceded by making of a groove. The resultant specimens will have a conical tang and a biconical body truncated at the base.

Before concluding the discussion on the method of construction a few words on the tang are necessary. The tang has no less importance and gets no less preference than the body during construction. In fact it will be more correct to say that the tang gets primary attention of the workmen. In no less than seven cases there is clear evidence that the tang was made first and then the body. The importance of tang during construction may be due to the fact that :—

1. What we now call ' tang ' may be really the point. The implement will then be some other tool, viz. awl.
2. The worker being cautious makes the tang first for the delicate structure of the tang may be broken at the stage of construction and under those circumstances the labour of working on the body will go in vain.

Some of the curved specimens look like intentionally made, while some others, especially those of the miscellaneous groups (Nos. 26-32) do not seem to be purposely made.

The length of the specimens has nothing to do, specially, with the use of the implement. The points in at least thirty cases seem to have been remodelled after polishing. If the body was used as handle of the implement then these secondary retouches would not have been necessary. The length of the tang also does not appear to be a primary object and

had perhaps nothing to do with the use of the specimens. For, at least in seventy specimens, the tang was refashioned even at the cost of its length.

Some of the points might have been made of bovine bones, for a bovine left premolar was found from the hoard. Some of the specimens were sent to Professor F. E. ZEUNER for examination. Though he has not made a detailed examination, his impression is that :—

1. They are made with metal knives from long bones, some of which could be of cattle.
2. The curve at the tip of the specimens is intentionally made.
3. They might have been used as part of wearing comb.

SIMILAR FINDS

Almost exact parallels to our type A and B specimens from the Andhra workshop and the points from the stratified layers of Nasik, come from Taxila. These correspond to the type 'a' and 'b' of MARSHALL, who describes them as arrow-heads.[1] Type 'a' tools are from Strata II and IV, while type 'b' are from Strata II and III at Bhir mound. In a recent excavation at Sirkap, GHOSH also found them at Sirkap.[2] At least one specimen is reported from Rairh.[3] They also occur in Andhra layers at Kolhapur.[4] SAHNI reports them from Sambhar and opines that they were used for scratching or lettering the pottery.[5] The oldest specimens corresponding to our type AI specimens come from Mohenjodaro.[6] MARSHALL describes them as awls set in a handle. MACKAY, however, got specimens similar to our type B and called them tanged awls of problematic use.[7] Subsequently he found them from Chanhudaro belonging to the Jhukar and Harappa periods.[8]

1. J. MARSHALL, *Taxila*, (1951), II, p. 664, pl. 206, Nos. 1-11 also ref. Vol. I, pp. 102, 105, 109.

2. A. GHOSH, "Taxila (Sirkap)", *Ancient India* IV, (1947-48), p. 81, pl. XXI Nos. 14, 15. 1947-48.

3. K. N. PURI, *Excavations at Rairh*, 1939-40, pl. XXII, No. 16.

4. H. D. SANKALIA and M. G. DIKSHIT, *Excavations at Brahmapuri (Kolhapur)* (1945-46), p. 126, Fig. 25.

5. D. SAHNI, *Excavations at Sambhar*, p. 19, pl. XV, No. 7.

6. J. MARSHALL, *Mohenjodaro and Indus Valley Civilisation II*, 1931, p. 54, pl. CXXXII, Nos. 7, 8.

7. E. MACKAY, *Further Excavations at Mohenjodaro I* (1938), pp. 420-421, pl. CX Nos. 29, 10.

8. E. MACKAY, *Chanhudaro Excavations* 1943, p. 319, pl. XCII, No. 29. Also ref. Nos. 28 and 30-32.

Double-pointed bone objects resembling our type A specimens from surface, as well as some from the stratified layers, are found in the caves of Grimaldi.[1] These are described as gouges. Though our specimens are too recent to be compared to those of the Upper Palaeolithic times, it is interesting to note that similar objects are still in use in some parts of Europe.[2] Among the Mesolithic artefacts of Europe, specially the Northern, gouges formed a substantial and important object in the cultural life of the people.[3] Again, during the Neolithic period these are associated with Swiss lake dwellings.[4] CHILDE attributes to the Nordics, in contrast to the Danubians, the use of rounded bone points sharpened at both the ends.[5] The early Bronze Age cultures of Bohemia and Moravia had similar points and so also the urn-field cultures of Hungary and Lanoitz.[6] They also occur in the Natufian cultures of Palestine.[7-8] In both these places these were termed as gorgets after GARROD. In Egypt bone gorgets corresponding to our AI specimens and specially type A specimens from the surface layers were found in Badarian occupation layers at Mostagedda.[9]

PROBABLE USE

The use of these implements may now be considered. The material is bone. The use of this specific material may be due to one or more of the following factors :—(i) Its hardness. (ii) Easy workability. (iii) Rarity or high cost of other materials.

Bone was a choice material during the Upper Palaeolithic and Mesolithic periods owing to the first two factors. The same probably was the cause during the Neolithic period. Its use during the Bronze Age was mainly due to the third factor. In fact, even in Sialk I and II and in the Amaratian period we find bronze used only for ornaments or such valuable materials.[10]

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1. J. G. D. CLARK, " Development of fishing in Prehistoric Europe," *The Antiquarian Journal* XXVIII (1946), p. 46.
2. *Ibid.*, pp. 46-7.
3. J. G. D. CLARK, *Prehistoric Europe* (1951), p. 42.
4. CLARK, *The Antiquarian Journal*, XXVIII, p. 47, fig. 3.
5. V. G. CHILDE, *The Danube in Prehistory*, (1929), p. 123.
6. *Ibid.*, p. 288, 327.
7. D. A. E. GARROD, *The Stone Age at Mount Carmel*, (1937), p. 37, pl. XII, fig. 2, Nos. 11, 12 and 18.
8. F. T. PETRE, " *Excavations at Mugharet el Kebarah*," *J.R.A.I.* 1932, Vol. 62, p. 272.
9. G. BRUNTON, *Mostagedda*, 1937, p. 54, pl. XXXII, Nos. 5 e and h.
10. V. G. CHILDE, " *Archaeological Ages* as *Technological Stages*," *J.R.A.I.*, (1944), Vol. 74, p. 8.

Our specimens in the stratified layers were accompanied by iron objects. So the use of bone in this early historic period may be due to the third factor. If the primary factor was economy then the specimens were used for such objects which were needed in great numbers. If they were used singly then there was a probability of break or loss. Naturally their use as arrow-heads comes as a prime possibility. The supposition is strengthened by the fact that at Michelsberg these are associated with two bows made of yew.[1] MARSHALL also calls them as arrow-heads.[2] The huge number of specimens is by itself an objection against the suggestion of these specimens being used as stilus.[3] KAUTILYA mentions arrow-heads of bone for rending.[4] But if these objects served as parts of a composite tool, weapon or ornaments then they could as well have served as teeth of combs, particularly for weaving.[5] It is interesting to note that where these bone specimens were found is even now known to be a weavers ward. Probably this dates from the Andhra period.[6] Some of the specimens, specially some of the surface finds, might have been used as gorges.

Thus, these various types of bone points could and might have been used for a variety of purposes, as arrow-heads, ornaments and comb-teeth for wearing. The bent, curved or wavy types forming a considerable number still remain to be accounted for. Whatever be the exact purpose of these and others there is little doubt that in this layer of bone points at Nasik, we have evidence of an extensive bone industry of the Early Christian Era.

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1. V. G. CHILDE, *Danube in Prehistory*, (1929), p. 179.
2. J. MARSHALL, *Taxila*, Vol. II, p. 664.
3. A. GHOSH, " *Taxila* (Sirkap)," *Ancient India* No. 4, p. 81.
4. *Kautilya's Arthshastra*, ed. by Ganapati SHASTRI, Vol. 1, p. 253.
5. Mrs. I. KARVE saw these types of comb-teeth used among the tribal population in Orissa.
6. This is not impossible in India, where sections of a village or a town are occupied by various castes or followers of certain professions such as sweepers, weavers, goldsmith, and continue to remain so, unless disturbed by present day housing shortage.

APPENDIX I

Chart No. 1.

SHOWING THE VERTICAL DISTRIBUTION OF BONE OBJECTS AT NASIK

Objects	MG.N. layer (1)	MG.N. layer (2)	MG.N. layer (3)	MG.N. layer (4)	MG.N. layer (5)	MG.N. layer (6)	K.W.M. layer	MG.E.N. layer	MG.S.N. layer	Other sites	Remarks
A. Double-ended points	No. 1	Nos. 24, 26, 135, 135A.	Nos, 7, 8, 449.	—	No. 163	—	No. 58 layer da(2).	—	—	Surface Andhra Workshop (W.S.).	
B. Tanged points	—	—	—	—	—	—	—	No. 895 layer Ie(3)	Middle stratum No. 794	(1) Surface (2) Andhra W.S.	Conspicuous by its absence in the MG.N. layers.
C. Modelling tool (simple)	—	—	—	—	No. x	—	No. 86 layers d3(3)	—	—	—	
D. Modelling tool (ball pointed) ...	—	—	—	—	Nos. 187, 246.	—	—	—	—	—	
E. KOHL Sticks	—	Nos. 122, 127A, 127, 127B.	—	—	—	—	No. x layer C5(2).	—	—	—	
F. HANDLES of objects	—	—	—	—	No. 206	—	—	—	—	—	
G. Dentilium bead (?)	—	—	—	—	No. 5724	—	—	—	—	—	
H. Other objects of high finish and excellent workmanship	—	—	—	—	No. 576, 620.	—	—	—	—	—	

CHART NO. 2—TYPE A SPECIMENS[1] (TOTAL 771)

Sub-type	Sub-group	Total No. of specimens	No. of complete specimens	No. of specimens having one end broken	Nos. having both ends broken	No. with complete body	Nos. having incomplete body	Length of specimens mm.	Maximum breadth of specimens m.	Remarks
I	a1	11	Nil	3	8	9	2	57-92	6-8	
I	a2	11	1	3	7	4	7	42-83	6-9	In one specimen body shows fibrous decay.
I	b1	17	3	3	10	13	4	44-96	5-8	A group of 8 has got length 46 + 2 mm s breadth 6+1 mms.
I	b2	27	1	6	20	15	12	39-77	5-10	The shortest in length in one case has the maximum breadth.
II	a1	20	9+11 doubtful	—	Nil	19	1	45-85	4-7	The best finished group.
II	a2	23	6+6 doubtful	9	2	17	6	52-84	5-8	
II	b1	3	3 doubtful	—	—	3	—	49-57	6	
II	b2	5	1+2 doubtful	1	1	4	1	51-69	5-7	
II	c1	1	1	—	Nil	1	—	65	7	
II	c2	2	1+1 doubtful	—	Nil	2	—	57-74	7-6	
III	a1	7	2+1 doubtful	2	2	6	1	53-100	7-8	In finish this group is only next to IIIa.
III	a2	12	4	3	5	9	3	59-88	5-9	
III	b1	2	2	—	—	2	—	65-71	6-7	
III	b2	2	1 doubtful	—	1	1	1	71-74	7-6	The longer is thinner.

IV	a1	17	11+3 doubtful	3	—	14	3	47-77	5-7	
IV	a2	2	1	1	—	2	—	59-71	7-6	Shorter is broader.
V	a1	107	39	25	9	63	32	36-92	4-8	Kinship to groups I-11 VII-21 III-18 V-29 indefinite 29 always a
V	a2	1	63	21	6	85	29	35-91	45-9	Kinship to groups I-6 VII-10 III-34 VIII-7 V-5 indefinite 57 always b
V	b1	177	98	32	29	15	26	44-84	4-9	Kinship to groups II-28 VII-19 IV-29 Indefinite-84 VI-17 always a
V	b2	106	54+14 doubtful	20	3	69	22	41-94	6-9	Kinship to groups II-10 VII-20 IV-18 VIII-3 VI-6 Indefinite-49 always b
VI	—	103	30+2 doubtful	41	30	84	19	35-92	4-10	

1 All the sub-types excepting sub-type II are again divided as follows :—

a1 — polished, with circular or nearly circular sections.

a2 — ,, ,, other sections.

b1 — Unpolished with circular or nearly circular sections.

b2 — ,, with other sections.

In case of sub-type II we have a1, a2, b1 and b2 like other groups, Moreover

c1 — classical bow-shaped with circular or nearly circular sections.

c2 — ,, ,, other sections.

Chart No. 3 TYPE B SPECIMENS (Total 728)

Sub-Type	Sub-Group	Total No. of specimens	No. of Complete specimens	No. of specimens with Tang broken	No. of specimens with Point broken	No. of specimens with both ends broken	No. of specimens having a Complete body	No. of specimens having Incomplete body	Length of the Body of specimens of the group	Bre[illegible] specimens of the group	Length of the Tang of the specimens of the group	Breadth of the Tang of the specimens of the group	Measurental Groups						General Remarks
													No. of specimens	Length of Body	Breadth of Body	Length of Tang	Breadth of Tang	Remarks on the Sub-Groups	
	a1	7	Nil	7	2	2	5	2	32-56	6-11	—	—	1	32 mm.	8	—	—		No relation with the length of the body and thickness or the contour of the body.
													1	53 mm.	6	—	—		
													1	54 mm.	6	—	—		
													4	55 mm. to 56 mm.	7 mm. to 11 mm.	—	—		
	a2	2	Nil	2	1	1	2	Nil	57-64	7-8	—	—	1	57	7	—	—		These two specimens are much inferior in workmanship to the Ia group.
													1	64	8	—	—		
	b1	35	2+3 doubtful	25+5 partial	13	12	33	2	33-73	6-10	16-25	5-6	4	37-38	6-8	—	—	In two specimens tang present tang in one specimen.	Excepting these 26 specimens grouped in different measurements, other specimens are too varied to come under any group.
													3	33	7	16	5-55		
													11	47-48	7-9	25	6		
													8	57-58	7-8	—	—		
													2	31	7	16	5	tang in one specimen.	Measurements of the broken tang are given on reconstruction.
													3	37-38	7-8	13 & 16	5 & 6	tang in two specimens.	
													9	40-41	7-8	14 & 17	5-6	tang in 2.	
	b2	28	4+3 doubtful	17+4 partial	12	12	26	2	31-72	5-9	13-18	5-65	6	51-52	7-9	17	6-5	tang in 1 specimen.	
													2	54-55	7-8	14	6	tang in 1 specimen.	
													5	62-63	7-8	—	—		
													1	72	5	—	—		

1 Excepting in the case of Sub-type I, all the other groups are divided as follows—
a1 — with circular or nearly circular cross section.
a2 — with other cross sections.

In case of sub-type I, we have in addition.
b1 — rough finish, with circular or nearly circular section.
b2 — ,, ,, with other sections.

Measurements always in mm.

a1	94	24	44+13 partial	43	30	89	5	33-71	5-11	16-27	5-7	—	—	—	—	—	—	Due to the different type and intensity of the curvature in the body it is difficult to make groups.
a2	80	2+4 doubtful	33+13 partial	36	6	77	3	32-56	5 to 10	15 to 25	4-7	—	—	—	—	—	—	-Ditto-

1 Measurements always in mm. and when the specimen is broken measurement of the reconstruction given.

CHART No. 3 TYPE B SPECIMENS (TOTAL 728)—Cont.

Sub-Type	Sub-Group	Total No. of specimens	No. of Complete specimens	No. of specimens with Tang broken	No. of specimens with Point broken	No. of specimens with both ends broken	No. of specimens having a Complete body	No. of specimens having Incomplete body	Length of the Body of specimens of the group	Maximum Breadth of the specimens of the group	Length of the Tang of the specimens of the group	Breadth of the Tang of the specimens of the group	Measuremental Groups: No. of speci mens	Length of Body	Breadth of Body	Length of Tang	Breadth of Tang	Remarks on the Sub-Groups	General Remarks
III	a1	18	1	8+3 partial	7	3	14	4	35-68	6-8	13-23	4-6	1	35	6	—	—		
													2	35	7	13	5. 5.5	In one 5, other 5.5	
													3	35	8	16	6	Tang in two specimens.	
													2	42	7	16	5 & 5.5	Tang in both.	
													2	51	6	17	4	Tang in one specimen.	
													2	51	8	1	6	Tang in one specimen.	
													1	55	7	—	—		
													2	64	7	—	—		
													1	68	6	23	4.5		
													2	68	8	—	—		
	b2	11	Nil	3+2 partial	6	2	10	1	37-68	6-9	13-20	5 & 5.5	4	37	7	13 & 15	5 & 5.5	Tang 2 13×5-5.5 1 15×5.	
													2	44	7	20	5.5	Tang in 1.	
													2	50	6	—	—		
													1	61	7	—	—		
													1	68	7	20	5		
													1	68	9	—	—		
													1	33	7	23	6		
													2	41	7	13	6	Tang in one specimen.	
													3	50	7	18 & 24	5 & 6	Tang in two specimens.	
													1	53	7	—	—		This group shows the variation in measurements.
													1	54	8	23	6.5		
													3	56	7	—	—		
													1	57	6	22	5		
													1	56	8	—	—		
IV	a1	24	8+2 doubtful	5+4 partial	7	2	23	1	33-71	6-9	13-25	5-7	1	60	7	—	—		
													1	60	9	—	—		
													1	62	8	—	—		
													3	66	7	25	5.5-6	Tang in two specimens.	
													2	67	8	13	6.5	Tang in one specimen.	
													1	69	8	—	—		
													1	70	8	18	6.5		
													1	71	9	24	7		

	a2	11	8	1+2 partial	1	1	11	Nil	33-70	6-9	7-21	5-6.5	1	33	8	7	5	
													2	40	7	12	5 & 6	Tang in both.
													2	50	8	19 & 21	6.5	
													4	53	6-8	21	5 & 5.5	Tang in two specimens.
													1	70	8	21	6.5	
														70	9	—	—	
V	a1	29	8	8+4 partial	10	4	27	2	41-78	5-9	19-25	5-6	—	—	—	—	—	Impossible to bring them in any group.
	a2	22	5	7+4	8	3	18	4	39-73	6-9	15-20	5-6	—	—	—	—	—	Ditto.
													1	42	6	20	5	
													2	42	7	—	—	
													9	45-47	7-8	14/17/ 19	6/5.5/ 6	Tang in three specimens.
													6	50-51	8-9	26/16	5/6	Tang in two specimens.
VI	a1	51	6	39	8	—	49	2	42-88	6-9	14-28	5-6	11	63-64	7-8	22/28	5/6	Tang in two specimens.
													13	59-60	6-7	21	6	Tang in one specimen.
													2	69	7/9	—	—	
													1	85	8			
													1	88	9			
	a2	25	2	20+1 partial	5+2 partial	3	22	3	43-82	6-10	13-25	5-7	1	43	6	—	—	
													2	47	7-8	19	6	Tang in one specimen.
													4	54	7	14	5.5	do.
													2	61	7	—	—	
													3	63	8	—	—	
													1	64	8	—	—	
													2	64	7	22/25	5/5.5	Tang in both.
													1	65	6	—	—	
													1	65	8	—	—	
													2	65	9	—	—	
													1	66	10	—	—	
													3	73	7	—	—	
													2	82	8/10	13	7	Tang in one.

Chart No. 3 TYPE B SPECIMENS (Total 728)—contd.

Sub-Type	Sub-Group	Total No. of specimens	No. of Complete specimens	No. of specimens with Tang broken	No. of specimens with Point broken	No. of specimens with both ends broken	No. of specimens having a Complete body	No. of specimens having Incomplete body	Length of the Body of specimens of the group	Maximum Breadth of the specimens of the group	Length of the Tang of the specimens of the group	Breadth of the Tang of the specimens of the group	Measuremental Groups: No. of specimens	Length of Body	Breadth of Body	Length of Tang	Breadth of Tang	Remarks on the Sub-Groups	General Remarks
VII		27	Nil	18	13	11	5	16	—	—	—	—	—	—	—	—	—		Measurement will not give any idea.
													1	28	6	—	—		
													2	36	6	16/18	5/5.5	Tang in both.	
													6	41-42	6-7	13	5	Tang in one specimen.	
VIII	a1 almost straight	55	3	40+3 partial	15	8	49	6	28-71	6-10	13-19	5-7	7	49	7	—	—		
													10	53-54	6-9	19	5/6	Tang in two specimens.	
													5	46	7-9	18	6	Tang in one specimen.	
													6	60	6-8	18	5		
													1	62	9	—	—		
													7	67	7-10	—	—		
													10	71	6-9	18	6	Tang in one specimen.	
													1	41	7	—	—		Continued from measurement column.
													4	43	6	—	—		
	a1 slightly curved	36	Nil	2, +6 partial	13	8	31	5	41-81	5-10	20-34	5-6	1	46	7	—	—		
													1	50	8	—	—		1. 77×9
													2	50	7	—	—		1. 81×7
													2	51	6	20	5	Tang in one.	
													1	56	6	22	5		
													2	59	8	23/24	6		
													1	59	7	—	—		
													2	61	7	—	—		
													1	61	8	—	—		
													1	62	7	—	—		
													1	64	6	—	—		
													1	65	8	—	—		
													1	67	8	—	—		
													1	68	6	—	—		
													2	68	7	—	—		
													2	68	8	34	6	Tang in one specimen.	
													1	70	5	—	—		
													2	70	7	—	—		
													1	70	10	—	—		
													1	73	6	—	—		

VIII	a1 curved	13	Nil	11	5	2	10	3	—	—	—	—	—	—	—	—	—	Measurement is not practicable.	This group stands in between the groups previously described but cannot be included into the regular curved group.
	a1 akin to sub-type.	18	1	13	7	2	17	1	—	—	—	—	—	—	—	—	—	—	Ditto
	a1 akin to sub-type.	17	1	13	6	2	15	2	—	—	—	—	—	—	—	—	—	—	—
	a1 but to a lesser degree.	9	4	3	2	2	7	2	—	—	—	—	—	—	—	—	—	—	—
											13-22	45-6	2	31	6	21	4.5	Tang in both.	Rest of the specimens cannot be grouped together.
	a2 Straight sub-type II	57	8	30	7	2	52	5	31-72	5-10	—	—	9	42	6-10	13-17	5-6	Tang in five specimens.	
													5	45	6-9	15/17	5/6	Tang in two specimens.	
													2	48	7/8	13	6	Tang in one specimen.	
													11	56	7-9	13-17	5-6	Tang in four specimens.	
													6	58	8-10	22	6	Tang in one specimen.	
													5	66	7-8	13	6	Tang in one specimen.	
VIII	a2 curved	16	4	12	3	2	15	1	—	—	—	—	—	—	—	—	—	—	—
	a2 Sub-type V	22	5	12	3	1	21	1	—	—	—	—	—	—	—	—	—	—	—
	a2 Sub-type VI	21	7	9	6	3	21	Nil	—	—	—	—	—	—	—	—	—	—	—
	a2 Indefinite.	6	Nil	3	4	1	6	—	—	—	—	—	—	—	—	—	—	—	—

APPENDIX II

Identification of Bones

By

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The M. S. University of Baroda.

Antiquity No.	*Layer No.*		*Excavated Bone*	*Identification*	
364	MG.N.	5	Left lower jaw	(Cristatus)? Sus sp.	Domestic pig
389	,,	,,	Cervical vertebra	Capra or Ovis	Goat or sheep
392	,,	,,	Excreta of a carnivore	eg.	Dog ?
524	,,	,,	Astragalus	Bos indicus	Ox
555	,,	,,	Incisor tooth	Rattus rattus	Rat
556	,,	,,	Right upper jaw	Bos indicus	Ox
564	,,	,,	Right upper jaw } Left upper jaw }	Sus sp.	Domestic pig
565	,,	,,	Neck vertebra	Bos indicus	Ox
571	,,	,,	Molar tooth	,, ,,	,,
574	,,	,,	Right lower jaw	Sus sp.	Domestic pig
630	,,	,,	Left lower jaw	Bos indicus	Ox
632	,,	,,	Left upper jaw with last two molars	Sus sp.	Domestic pig
637	,,	,,	Right upper jaw	Bos indicus	Ox
662	,,	,,	Right upper jaw	Sus sp.	Domestic pig
691	,,	,,	Incisor tooth of the right lower jaw.	Bos indicus	Ox
692	,,	,,	Portion of lower jaw	Tetraceros quadricornis	Four horned antelope
726	,,	,,	Left lower jaw	Sus sp.	Domestic pig
727	,,	,,	Molar tooth	,, ,,	,, ,,
763	,,	,,	Proximal end of ulna	Capra or Ovis	Goat or sheep
799	,,	,,	Right lower jaw	Sus. sp.	Domestic pig
800	,,	,,	Right lower jaw	,, ,,	,, ,,
801	,,	,,	,, ,, ,,	,, ,,	,, ,,
802	,,	,,	Last molar	Cervus unicolor	Sambar deer
816	,,	,,	Left lower jaw	Sus sp.	Domestic pig

Antiquity No.	*Layer No.*		*Excavated Bone*	*Identification*	
817	MG.N.	5	Right lower jaw	Sus sp.	Domestic pig
823	,,	,,	Canine teeth (upper and lower jaw)	,, ,,	,, ,,
5027	,,	,,	Left upper jaw	Seminopithecus	Common Langur monkey
			Antlers	Axis axis	Chital or Spotted deer
5051	,,	6	Right upper jaw	Bos bubalus	Buffalo
361	,,	2	Molar tooth	Sus cristatus	Domestic pig
434	,,	3	Scapula	Bos indicus	Ox
452	,,	,,	Distal end of humerus	,, ,,	,,
104	,,	4	Metacarpal right side	Sus sp.	Domestic pig
523	,,	,,	Right lower jaw	Ovis	Sheep
544	,,	,,	Incisor tooth of left lower jaw	Cervus unicolor	Sambar deer
579	,,	,,	Canine tooth	Sus sp.	Domestic pig
684	,,	,,	Premolar teeth of upper jaw.	Cervus unicolor	Sambar deer
781	MG.E.N.2		Left upper jaw	Sus sp.	Domestic pig
649	MG.S.N.1		Portion of carapace	Trionyx sp.	Turtle
710	,,	4	Horn	Boselaphus trago camelus	Nilgai
797	,,		Tooth	?	?
5239	MG.N. 5		Rib portion	Bos indicus	Ox
5240	,,	6	Upper jaw fragment	,, ,,	,,
799			Right lower jaw	Sus sp.	Domestic Pig

APPENDIX III

IDENTIFICATION OF SHELLS (Excavated at Nasik and Jorwe).

By Dr. H. C. RAY, Asst. Zoologist, and Shri. A. S. RAJAGOPALAIENGAR, Zool. Asst.

ZOOLOGICAL SURVEY OF INDIA, CALCUTTA.

Locus	*No.*	*Layer*	
K. W. N.	66b	2	*Ornamentaria annulus annulus* (Linn.).
,,	66i	,,	,, ,, ,, ,,
MG.N.	504a	4	*Gratiadusta pallida pallida* (Gray).
,,	504b	,,	,, ,, ,,
K.W.N.	66f	2	,, ,, ,,
,,	66c	,,	*Nerita chameleon* (Lamk.).
,,	66a	,,	*Dostia crepidularia* (Lamk.).

Locus No.		*Layer*	
K.W.N.	66m	2	*Melanoides* (*Melanoides*) *pyramis* (Hutton).
,,	66h	,,	*Viviparus bengalensis* (Lamk.).
,,	66e	,,	*Xesta semirugata* (Beck).
,,	66k	,,	*Viviparus bengalensis* (Lamk.).
,,	66d	,,	,, ,, ,,
,,	66g	,,	,, ,, ,,
,,	66j	,,	Bleached specimen—not possible to identify.
MG.N.	437a	5	*Indonaia caerulea* (Lea).
,,	437k	,,	,, ,, ,,
,,	437j	,,	,, ,, ,,
,,	437h	,,	,, ,, ,,
,,	437f	,,	*Parreysia favidens* (Bens.).
,,	437d	,,	,, ,, ,,
,,	437v	,,	,, ,, ,,
,,	437q	,,	,, *wynegungaensis* (Lea).
,,	437c	,,	,, ,, ,,
,,	437n	,,	,, ,, ,,
,,	437p	,,	,, ,, ,,
,,	344	,,	,, *favidens* (Bens).
,,	344b and 344f	,,	,, *wynegungaensis* (Lea).
,,	344c	,,	,, *favidens* (Bens.).
,,	344d	,,	,, *wynegungaensis* (Lea).
,,	382j	,,	,, ,, ,,
,,	382c	,,	*Indonaia caerulea* (Lea).
,,	344e	,,	*Parreysia wynegungaensis* (Lea).
,,	437l	,,	,, ,, ,,
,,	129	3	*Conus sp.*
K.W.N.	42	X	*Xancus pyrum* (Linn.).
MG.N.	304a	5	*Parreysia wynegungaensis* (Lea).
,,	304b	,,	*Lamellidens sp.*
,,	382k	,,	,, ,,
,,	437i	,,	*Parreysia wynegungaensis* (Lea).
,,	437m	,,	,, *favidens* (Bens.).
,,	437r	,,	,, ,, ,,
,,	437t	,,	,, ,, ,,
,,	437w	,,	,, *wynegungaensis* (Lea).

Locus No.		*Layer*	
K.W.N.	88e	3-4	*Parreysia wynegungaensis* (Lea).
,,	88c	,,	,, ,, ,,
,,	88b	,,	*Parreysia sp.*
MG.N.	437u	5	*Indonaia caerulea* (Lea).
,,	437s	,,	,, ,, ,,
,,	382a	,,	*Parreysia favidens* (Bens.).
,,	382b	,,	,, ,, ,,
,,	382e	,,	,, ,, ,,
,,	382f	,,	,, ,, ,,
,,	382h	,,	,, ,, ,,
,,	382i	,,	,, ,, ,,
,,	129a	,,	,, ,, ,,
,,	129b	,,	,, ,, ,,
,,	129c	,,	,, ,, ,,
,,	129d	,,	,, ,, ,,
With no number.			*Oliva ispidula* (Linn.)
MG.N.	344a	,,	,, *subulata* (Lamk).
,,	600	,,	*Oliva sp.*
	304E	,,	,,
,,	(5)C7		*Conus sp.*
Jorwe			*Telescopium telescopium* (Linn.).
MG. S.N.	896		*Cantharus undosus* (Linn.).
With no number.			,, ,, ,,
K.W.N.	88	3-4	*Murex sp.*
,,	661	2	*Viviparus bengalensis* (Lamk.).
MG.N.	588	5	*Gratiadusta pallida pallida* (Gray).
,,	192	,,	*Xancus sp.*
,,	382l	,,	*Lamellidens sp.*
,,	139	3	*Cyrena impressa* (Desh.).

In Pot 2B (5) MG.N.—Broken pieces of a bivalve shell.

The collection of shells excavated at Nasik and Jorwe appears to include representatives of different forms, such as, land (*Xesta semirugata*), fresh water (*Viviparus bengalensis, Parreysia favidens, Lamellidens* sp.), brackish (*Dostia crepidularia*) and marine (*Xancus pyrum, Nerita chameleon, Ornamentaria annulus annulus, Oliva* sp. and *Conus* sp.), all of which belong to the existing genera and species, but none to any extinct form. The shells of *Ornamentaria annulus annulus* might have been used by the people of that area, like those of other parts of our country, as the medium of exchange along with *Nonetaria moneta* and also for ornamental and

dacorative purposes. The shells of *Xancus pyrum* or 'Sacred Chank', as it has been commonly called, is highly esteemed by the Hindus even today for religious purposes and is also used in the manufacture of bangles, rings and other ornaments—this industry has greatly flourished at Dacca, now in East Pakistan, though it is abundantly found in the Gulf of Mansar, particularly at Tuticorin. The shells of *Conus, Nerita* and *Oliva* are known to be used by the tribal people and islanders for decorative purposes in view of their brilliant colouration and markings.

The food value of molluscs has been realised by men since very early times. The animals of *Viviparus bengalensis* and those of *Lamellidens* and *Parreysia* are known to be highly esteemed as food even today by the poor class people. Not only that, their shells are also used in the manufacture of lime, ordinary buttons, rings, etc.

PART II

EXCAVATION AT JORWE

I

Situation and Antiquity

Jorwe[1] (E. Long 74.17° and N. Lat. 19.33°) is a small village on the north or the left bank of the Pravara river. It is about 5 miles due east of Sangamner, which is also on the same side of the river, and a taluka place of some importance in Ahmadnagar district. Both Jorwe[2] and Sangamner,[3] as well as other villages in the vicinity, can boast of some antiquity. In fact, by the 11th century, they are mentioned in some of the Yādava inscriptions of Saka 991 (A.D. 1069) and Saka 1020 (A.D. 1098), as Jumyaravegrāma and Samgama-nagara or-nera respectively.

However, the ancient mounds at the former place remained unknown and unnoticed. They would have remained so had they not been occupied during the heavy floods in 1947 by the villagers who previously lived along the river bank. Owing to this occupation these deserted sites began to yield pottery and other objects. Some of the former were found intact and were brought in use again. Since most of these were painted and had spouts they appeared unusual. For such vessels are not made now. This attracted the attention of Shri Shankar Annaji Sali, a young officer in

1. Survey sheet, Government of India, 1 inch = 1 mile No. 47 I/6 and I/2.

2. *JBBRAS.*, (NS) III, p. 189 and *Quarterly of Bhārat Itihāsa Samshodhak Maṇḍal* (Poona), III (1922) p. 4.

3. *E.I.*, II, p. 217.

the Taluka Development Board at Sangamner. He announced this discovery in a daily paper called "Dainik Bhārat," also relating the local tradition about Jorwe. This says that Jorwe is the ancient Jarāsandha-nagara (a town founded by Jarāsandha, a famous and powerful king who besieged Mathurā, the Yādava capital 21 times and ultimately drove Krishṇa out to Dwārakā. He was finally killed in a duel by Bhīma with the help of Krishṇa).

A cutting of the report was sent to me by Shri N. A. GORE, then the Secretary, Extra-Mural Department of the University of Poona. It was received just before we were starting for excavations at Nasik. Dr. M. G. DIKSHIT immediately contacted Shri SALI and requested him to see him at Sangamner with the pots. Thus, before we began the work at Nasik, we had in our possession objects, which later turned out to be the most ancient vessels in the Deccan. Jorwe was then twice visited, once with Shri A. GHOSH, the present Director General of Archaeology in India. Other sites in the vicinity, particularly Javale Kaḍlag (old Jamvalemmva-grāma), were also examined. Besides a large mass of painted pottery, microliths were also collected. We doubted, however, whether these two were contemporary and whether the former were not of the Muslim period! For these might be an intrusion in an older microlithic culture.

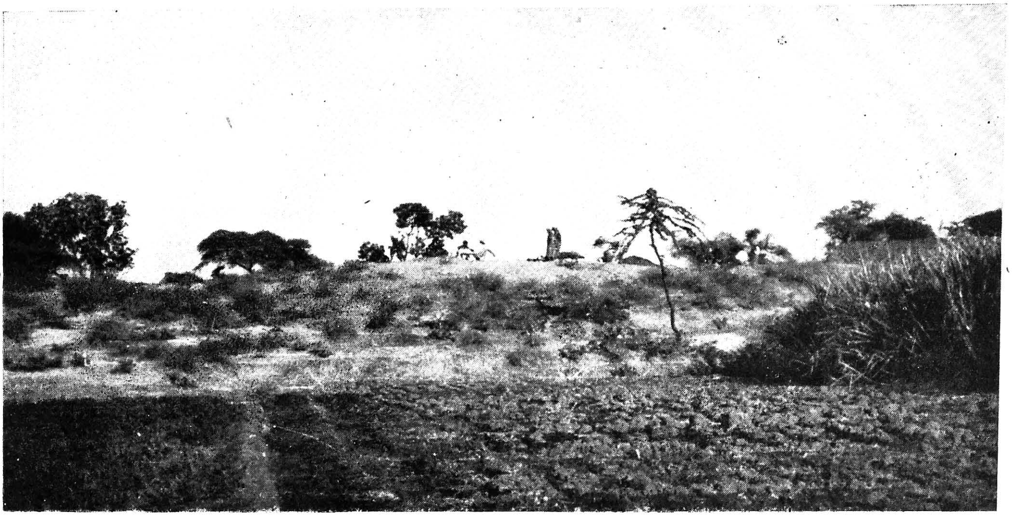
These doubts were laid at rest when sherds and a spout, identical with those noticed in Jorwe painted pots, were found in the lowest black soil layer and that too associated with microliths, at Nasik. It was then that we decided to have a trial dig at Jorwe in the short time and funds that we had at our disposal. A larger excavation was also precluded because of a great scarcity of labour, it being the harvest time.

II

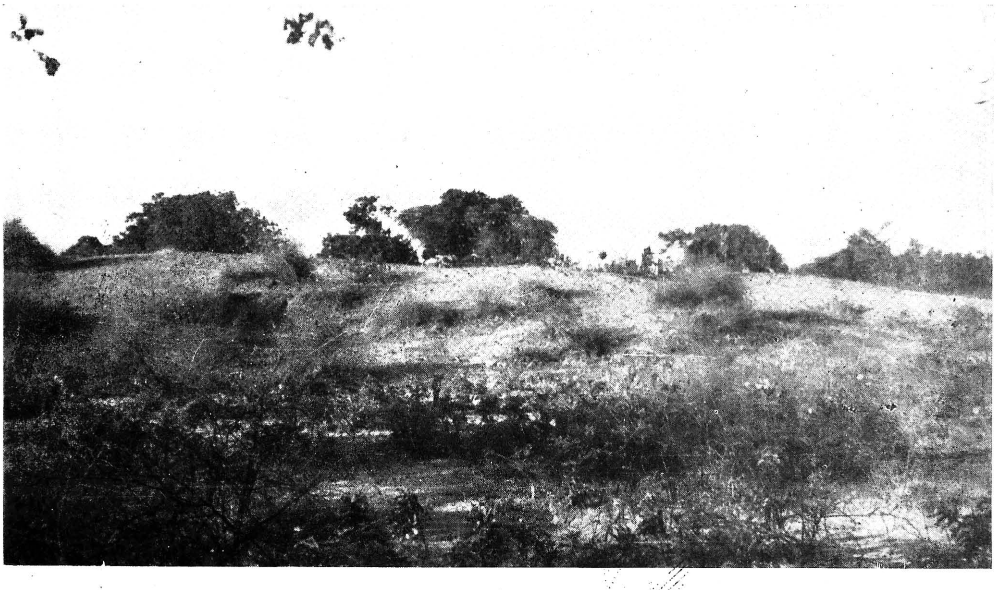
THE SITE

The site, as the excavation showed, is a one-period site. There are no debris of later period. So the mounds, which might be occasionally eroded, appear remarkably low. [pl. XXX]. In fact, they do not look like mounds. The entire village seems to have a slightly elevated level, compared to that of the river. Any way, these areas are at least half a mile away from its present river bed. There alone the ground is strewn with chalcedony flakes and potsherds.

However, in our selection of the site we were guided by a spot where, during our first visit, we had found intact two painted pots, one



a



b

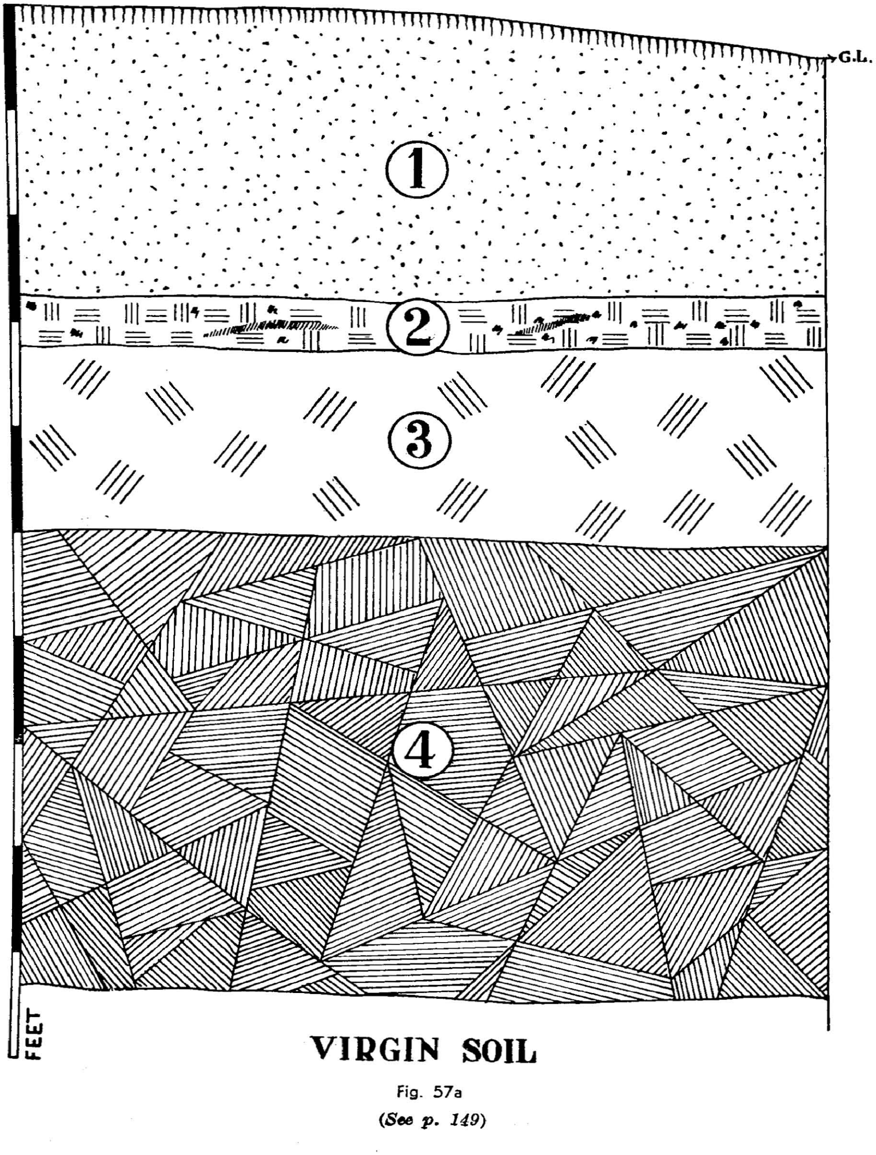
General view of Mounds, Jorwe.

(a) Distant view

(b) Close-up

(*See p. 148*)

SECTION: TRENCH 1
EASTERN WALL
JORWE



VIRGIN SOIL

Fig. 57a

(*See p. 149*)

covering the mouth of the other, and some bones within. This had led us to expect some burials there. But surprisingly all the five pits dug by us yielded nothing but a large mass of painted and unpainted pottery, microliths and only one tubular bead of smoky chalcedony. The excavated debris went to a depth varying between 6 to 9 feet, and though divisible stratigraphically into four layers, from the contents seem to belong to one cultural period only. Owing to this impression the pottery and microliths, though collected very carefully and stratigraphically, were later mixed up. With regard to the former, however, it appears, after laboratory studies, that perhaps it would have been better if the collection from each layer had been kept separate.

Stratification

The stratification in the five pits was as follows :—

Layer	JrW I 5′×10′	JrW II 5′×14′	JrW III 5′×10′	JrW IV 5′×10′	JrW V 5′×10′
1	Loose brown earth upto 2′9″ from GL.	Loose brown earth upto 2′9″	Loose brown earth upto 2′9″	Loose brown earth upto 2′8″ At 2′6″ a pair of pots with ash and bones.	Loose brown earth upto 2′9″
1a	...	Layer of gravel 2′6″ Jar with bones.	Layer of gravel 2′6″ Jar with bones.	...	...
1b	...	...	Band of black ash.	...	Band of black ash.
2	Ash and charred earth (3′3″) from GL.	White ash band.	Loose blackish soil.	Ash and charred earth.	Ash and charred earth.
2a	...	...	Ash band.	...	...
3	Loose black soil.	Loose black soil.	Loose black soil.	Loose black soil.	Loose black soil.
4	Black sticky clay.	Black sticky clay.	Black sticky clay.	Black sticky clay.	Black sticky clay.
	Virgin at 9′4″	Virgin 6′	Virgin 6′	Virgin 6′	Virgin 6′

III

Chronology

Since there are no debris of several periods, we cannot have even a relative chronology based on stratigraphy. To have some idea of this culture, recourse must be had to the finds and their typological affinity with similar finds from other sites. The affinity of Jorwe painted pottery, particularly the spouts painted along their length, with a single but identical spout at Nasik [Period I] suggests that the Jorwe culture may be at least contemporary with Nasik I. Its microlithic industry exhibits features which are again identical with those found in extremely well-stratified context at Nāvḍā-ṭoli on the Narmadā. [See Map]. Here too, the industry belongs definitely to a proto-historic period, and is associated with a richer painted pottery complex, and a little copper or bronze. Further, six flat celts of low grade bronze were also discovered in a painted pot just before we began our work at Jorwe. It would be, therefore, not unjustified if the Jorwe culture is assigned provisionally to a Copper or Early Bronze Age period, before the Early Historic.

IV

Microliths

The Jorwe microlithic material is primarily from the five small trenches, with which the surface collection has got unfortunately mixed. And since the layer number as well as the serial number have not survived on each specimen, it is often impossible to distinguish between the surface and the excavated material. From the nature of the mound, however, one may say that those from the surface belong to the top layers of the same cultural period, as there are, in fact, no debris of a later occupation. The distribution of the excavated material, *as noted on the field,* is given below. The results of the final study are indicated separately.

		Cores	*Flakes*	*Blades*	*Chips*	*Scraper*	
Layer (1)	..	18	15	50	16	1	
,, (2)	..	8	14	16	1	..	
,, (3)	..	11	19	18	5	..	
		37	48	84	22	1	=192

About 47 pieces were collected from the surface. Thus, in all, we have had stratified pieces	192
Surface pieces	47
Total ..	239

The material is mainly milky chalcedony, but at times there are specimens of chert, crystal, carnelian and red jasper. Including the unworked as well as rough types of cores and flakes, we have :—

- i 50 Cores.
- ii 32 Chips.
- iii 21 Flattish blade chips.
- iv 63 Flakes, rectangular or pointed at one end, parallel-sided, edge unretouched ; with mid-ridge, at times even in the process of removal.
- v 73 Flakes, as (iii)-(iv) above, but with flat, rectangular flake scar. Some of the last do bear retouch, and have signs of use, hence they are further discussed under finished tools.

Total 239

Distribution

The discovery of microliths at Jorwe, a site in North Deccan, came as a welcome surprise. It not only fills in an important gap in the distribution of this lithic industry between Gujarat, Central Provinces and Central India in the north, and Andhra-Karnatak, and Tamilnad in the south, but its character seems to open before our eyes the vista of a vast proto-historic culture, which probably comprised (excluding Gujarat) all the regions mentioned above.[1] How far this optimistic outlook will be fulfilled, only future research can tell. The immediate importance of the discovery is that we now have definite clues with which to search for remains of proto-historic cultures in the Deccan. Presence of occasional and uncertain specimens with which the river gravels and the plateau are strewn were no certain guides. This had discouraged further work in the same direction.[2]

Character

Though in the absence of a more suitable term the industry has to be called microlithic, owing to the preponderance of blades, parallel-sided flakes, and fluted cores, it may be further qualified as " the Microlithic Blade Industry of Jorwe. " It exhibits what is termed " Crested guiding

1. Dr. Subba Rao of the M.S. University of Baroda informs me that a few sites in Saurashtra have also yielded specimens of identical industry. What the exact character of the Brahmagiri industry is, it is difficult to say. No cores seem to have been found or are described. It did have lunates, two-edged and one-edged blades, besides a few burins, chisel-ended points and scrapers. If drawings and photographs be any guides, then one specimen, included among " double-edged blades without retouch (Type I), (No. 7, pl. CXIV and Fig. 34), should be described as a "ridged flake" by cross flaking. (*Anc. Ind.*, No. 4, 250-53).

2. Sankalia, H.D. " Studies in Prehistory of the Deccan (Maharashtra), " *Bulletin of the Deccan College Research Institute*, Vol. IV, p. 186 ff and Vol. VI, p. 131 ff.

flake and Keeled core technique."[1] The object seems to be to have parallel-sided flakes which can be further trimmed into blades by retouching. This is apparent both from the number of such flakes, and blades and cores. At least four cores have a ridge made by alternate flaking along their length. This is almost on the other side, which already possesses a number of parallel flake scars. Normally this would suggest that such cores are ready for further flaking, the ridge serving as a guide. But some cores are so thin that it is doubtful if they could be further flaked. If so, the purpose of the ridge remains unexplained, unless it is presumed that the ridge is never removed, but remains till the last. When this stage was reached, it appears that the cores themselves were put to use. For in some instances, the cores are made almost flat and thin by delicate cross-flaking. This is so fine, at times, as to remind one of "ripple" flaking on Egyptain Neolithic tools from the Fayum Desert, for instance.[2] It is also a question whether in this industry a ridge was always prepared prior to flaking. For in one case (Fig. 58, 1), nearly 3/4 of the cortex of a cylindrical nodule is found intact, while the rest of the surface has two parallel flake scars, with a simple platform on either end. In nearly all cases of flattish cylindrical fluted cores only one half of the circumference is found flaked around. These cores have faceted platform, forming nearly a right angle with flaked surface. Technologically, thus, the collection is divisible into the following types :—

I *Cores*[3]

i Core, flaked around, section rectangular, flat faceted platform on one end.

No. 38, Jrw.	32 mm. long, 12 mm. broad, 11 mm. thick (Fig. 58, b).

ii Core, fluted on one surface, with ridge on the other by cross-flaking, section triangular.

No. 175, Jrw.	32 mm. long, 12 mm. broad, 11 mm. thick (Fig. 58, c).
No. 259, Jrw.	24 mm. long, 12 mm. broad, 6 mm. thick, Flat faceted platform at one end. (Fig. 58, d).

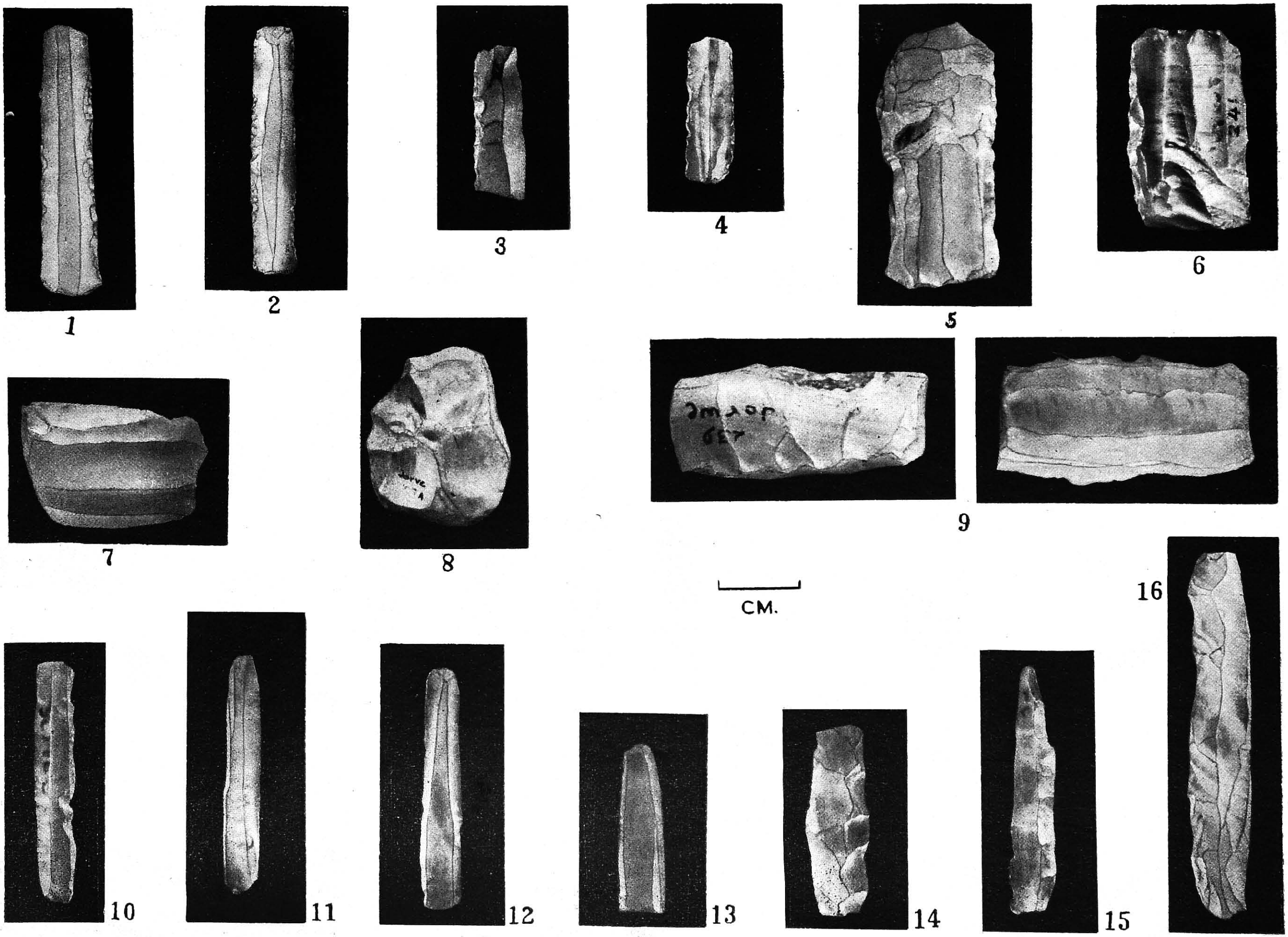
iii Core, fluted on one surface, ridge on the side, other face convex, section biconvex.

No. 239, Jrw.	30 mm. long, 14 mm. broad, 12 mm. thick, Flat faceted platform at one end. (Fig. 58, a, and pl. XXXI, 9).
No. 241, Jrw.	One end has a faceted paltform, the other has a bevelled sharp edge, 24 mm. long, 14 mm. broad, 14 mm. thick. (Fig. 58, f, and pl. XXXI, 6).
No. 188, Jrw.	32 mm. long, 12 mm. broad, 9 mm. thick. (Fig. 58, g).

1. Donmez, Ahmet and Brice, W. C., "A Flint Blade Workshop near Gazintep, South Turkey" *Man* (1951), p. 76-77.

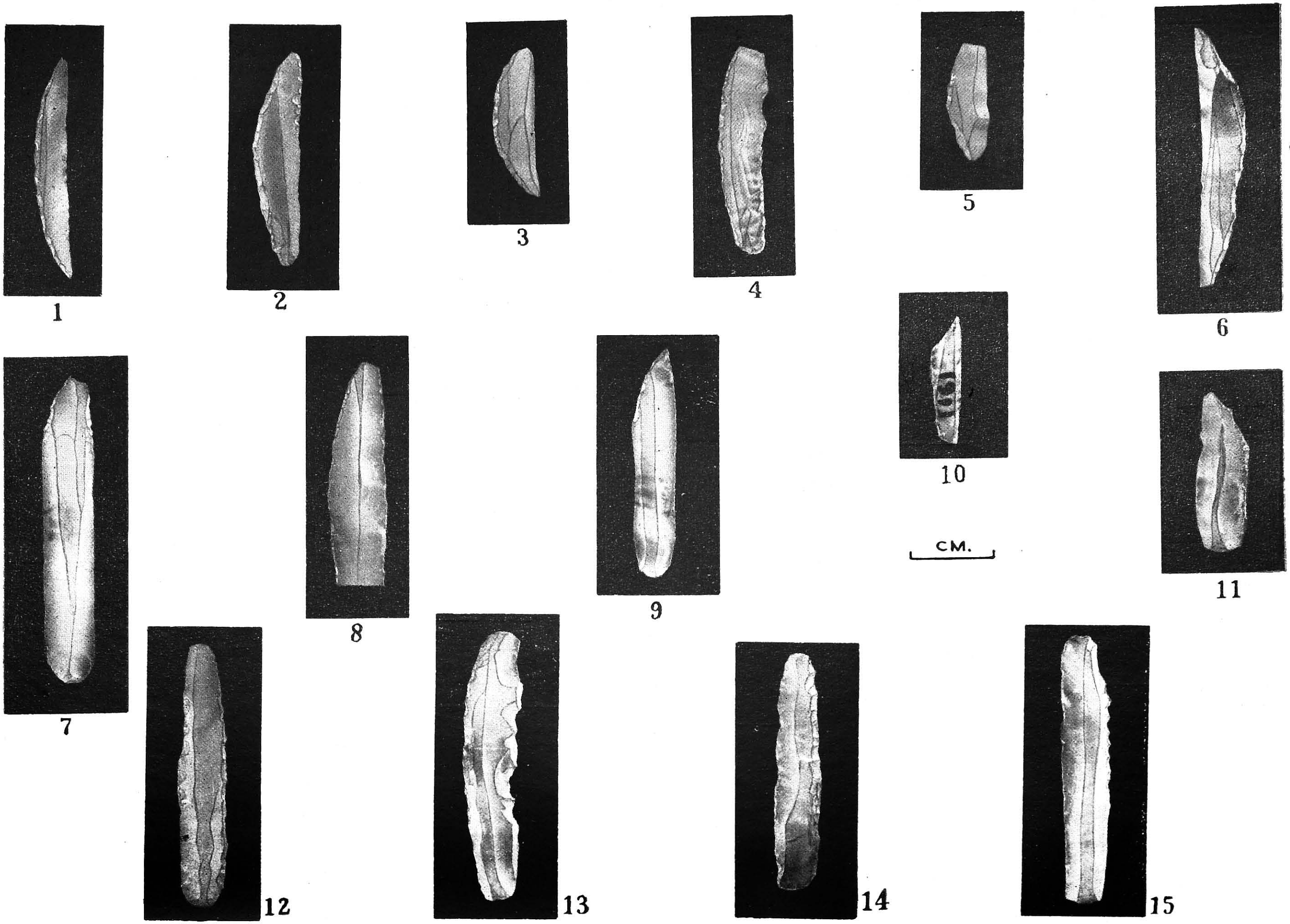
2. See G. Caton-Thompson and E. W. Gardner, *The Desert Fayum*, Plates (London, 1934), pl. XLVI.

3. Unless otherwise mentioned, the material in all these cores and flakes is milky or smokey chalcedony.



Microliths from Jorwe. Cores, Blades and Flakes 1–16.

(*See pp. 151-53*)



Microliths from Jorwe. Crescents, Obliquely blunted worked-back Blades and a Point (1–15).

(See pp. 152-53)

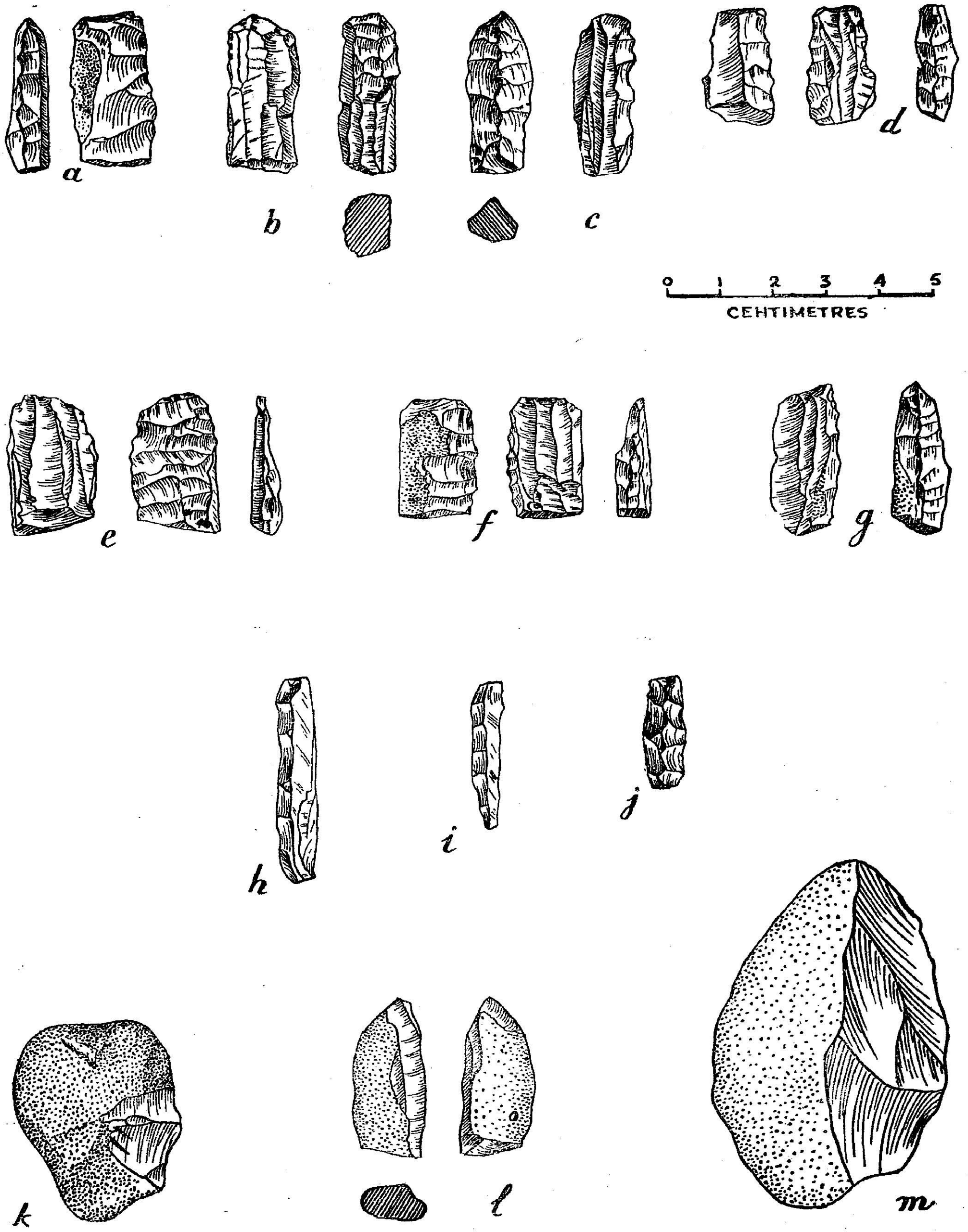


Fig. 58. **Microliths from Jorwe. Cores, Scrapers and Flakes (a-m)**
(*See pp. 151-53*)

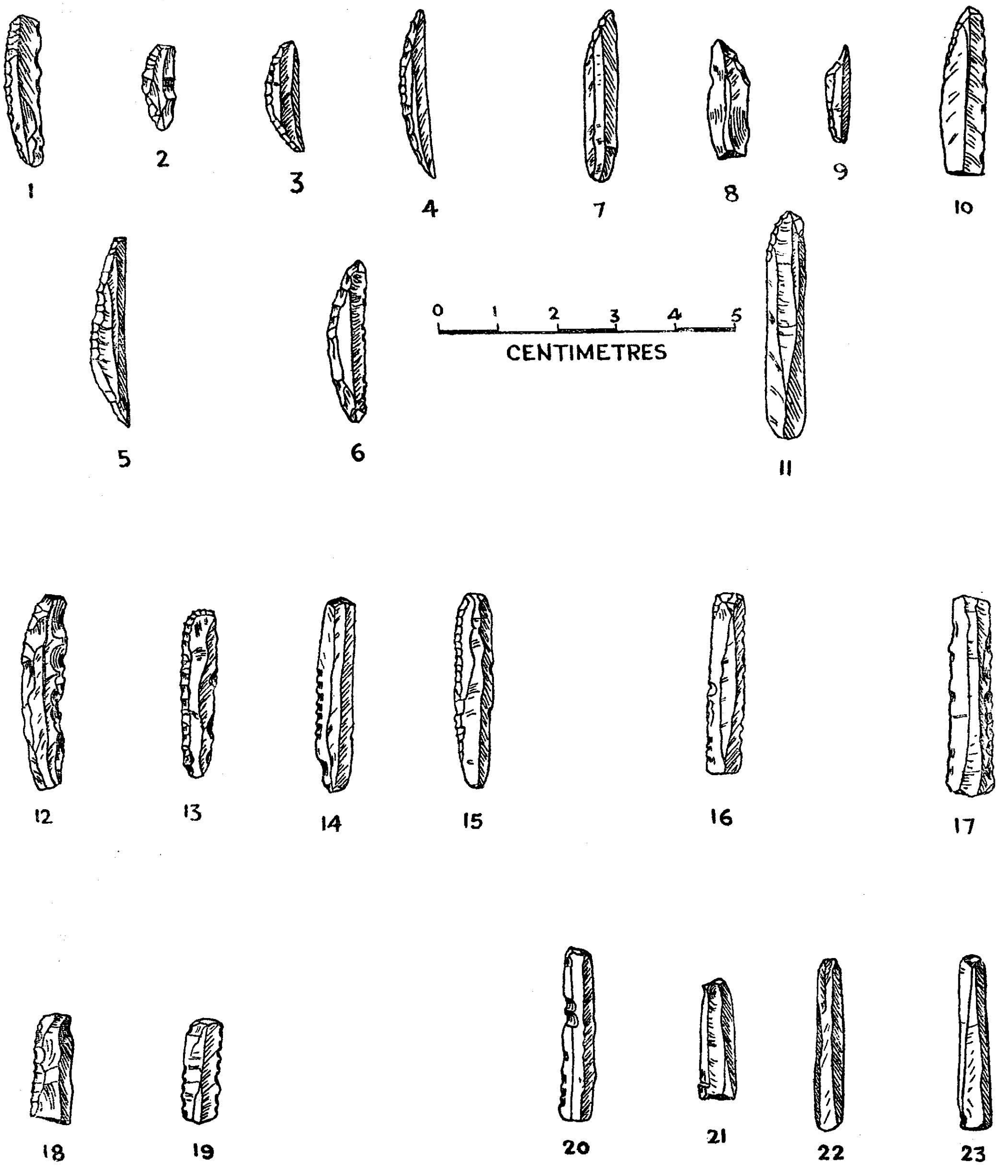


Fig. 59. Microliths from Jorwe, Blades and Flakes (1-23).
(*See pp. 152-53*)

No. 106, Jrw. It has an edge like No. 241, 25 mm. long, 19 mm. broad, 14 mm. thick (not illustrated).

iv Core, fluted on one surface, flattened on the reverse by delicate "ripple" or "serial" flaking. Perhaps used or turned into a side-scraper.

No. 69, Jrw. 29 mm. long, 6 mm. broad, 4 mm. thick. (Fig. 58, e).

v Core, having one or two parallel flake-scars only, the rest has cortex, section ovaloid
No. 169a, Jrw. 32 mm. long,[1] 9 mm. broad, 5 mm. thick. (Fig. 58, 1).

II *Flakes with crested ridge*

These are marked by cross-flaking on both sides of the ridge or on one side only.

No. 63, Jrw. Flake with cross-flaking on one side. 44 mm. long, 7 mm. broad, 2 mm. thick. [Fig. 58, h ; pl. XXXI, 16].

No. 34, Jrw. Similar as No. 63, but smaller. 30 mm. long, 5 mm. broad, 2 mm. thick. [Fig. 58, i ; pl. XXXI, 15].

No. 64, Jrw. Flake with a mid-ridge, cross-flaked on either side. 24 mm. long, 14 mm. broad, 4 mm. thick. [Fig. 58, j ; pl. XXXI, 14].

III *Lunates or Crescents*

All these are invariably vertically retouched on the arc side, leaving the chord—the edge—untouched. Nine specimens, of which 3 are intact, the rest have their tips broken.

No. 2, Jrw. Crescent blade. 29 mm. long, 4 mm. broad, 2 mm. thick (at its broadest and thickest points). [Fig. 59, 4 ; pl. XXXII, 1].

No. 98, Jrw. Crescent blade. 20 mm. long, 5 mm. broad, 2 mm. thick. [Fig. 59, 3 ; pl. XXXII, 3].

No. 92, Jrw. Crescent blade, both ends broken. 15 mm. long, 4 mm. broad, 2 mm. thick (almost uniformly). [Fig. 59, 2 ; pl. XXXII, 5].

No. 31, Jrw. Crescent blade, one end broken, the other rounded and not pointed. 27 mm. long, 5 mm. broad, 2 mm. thick. The back of the blade thins out at one end, so the retouch is only on half of the back. The edge is uneven, probably because of use. [Fig. 59, 1 ; pl. XXXII, 4].

IV *Blades*

Obliquely rounded into a pointed end by retouch only on the oblique part. This is either (a) on the left, or (b) on the right.

(a) Five specimens, of which 4 are intact.

No. 150, Jrw. Obliquely blunted blade, 29 mm. long, 6 mm. broad, less than 1 mm. thick. Chalcedony, with carnelian tip. [Fig. 59, 7 ; pl. XXXII, 9].

No. 145, Jrw. Obliquely blunted blade, with a mid-ridge, ends broken. 28 mm. long, 8 mm. broad, less than 2 mm. thick. [Fig. 59, 10 ; pl. XXXII, 8].

(b) In these the obliquely retouched part is on the right hand side.

No. 195, Jrw. Obliquely blunted blade, 20 mm. long, 6 mm. broad, less than 2 mm. thick. [Fig. 59, 8 ; pl. XXXII, 11].

---

1. The almost identical length and breadth in many of these cores may be accidental, or due to the identical needs (technique).

V *Point on an obliquely retouched blade*

This type is almost analogous to Type IV. The point is elongated and sharpened by a series of fine retouches on the oblique part. Only one specimen.

No. 1061, Jrw.	17 mm. long, 3 mm. broad, 1 mm. thick. [Fig. 59, 9 ; pl. XXXII, 10].

VI *Straight, worked-back, one edged blade*

These resemble and should be proto-types (as also Type IV) of the present knife blades. These have a straight, unretouched, but at times used, edge, while the back is also straight, but vertically retouched, either all along, or only partly. Nine specimens, of which 5 are intact, and 4 partly broken :—

No. 245, Jrw.	Straight, worked-back, one edged blade. 34 mm. long, 6 mm. broad, less than 1 mm. thick. [Fig. 59, 14 ; pl. XXXII, 15].
No. 265, Jrw.	Similar to No. 245, with almost identical measurements. Signs of use on edge. [Fig. 59, 15 ; pl. XXXII, 14].
No. 182, Jrw.	Similar to No. 245. Edge very much used. [Fig. 59, 12 ; pl. XXXII, 13].

VII *Parallel-sided two edged blades*

Two specimens. Both are intact, and have both the edges finely retouched, and/or used.

No. 152, Jrw.	Parallel-sided, two edged blade. 34 mm. long, 8 mm. broad, 2 mm. thick. [Fig. 59, 17 ; pl. XXXI, 1]
No. 1, Jrw.	Parallel-sided, two edged blade. 32 mm. long, 6 mm. broad, 2 mm. thick. [Fig. 59, 16 ; pl. XXXI, 2].

VIII *Saw-like blades*

Two specimens.

No. 268, Jrw.	Parallel-sided blade, broken. One edge has well marked retouch, which yields a saw-like edge. 19 mm. long, 6 mm. broad, 1 mm. thick. Opal. [Fig. 59, 18 ; pl. XXXI, 3].
No. 128, Jrw.	Parallel-sided blade, broken. In this case the edge looks saw-like because of use. [Fig. 58, 19 ; pl. XXXI, 4].

IX *Parallel-sided flakes, without any retouch*

Three are intact, and one broken.

No. 243, Jrw.	It has however a used edge. It is, therefore, possible that others, though not retouched, were also used. 31 mm. long, 5 mm. broad, less than 1 mm. thick. [Fig. 59, 20 ; pl. XXXI, 10].
Nos. 273, 135, 197, Jrw.	Simple flakes. [Fig. 59, 21-23 ; pl. XXXI, 11, 12, 13].

X *Core-scraper*

No. 186, Jrw.	Core-scraper (?) on an elongated oval chalcedony nodule. Edge on one lengthwise side by alternate flaking, the rest of the surface retains cortex. 67 mm. long, 44 mm. broad, 34 mm. thick. [Fig. 58, m].
No. 105A, Jrw.	Core-scraper (?) on a small roundish patinated opal nodule (?). It appears as if the core was previously worked, as it shows scar-like depressions, which have now acquired a glossy, smooth, surface. Later another flake was taken out on the edge side. 40 mm. long, 32 mm. broad, 26 mm. thick. [Fig. 58, k ; pl. XXXI, 8].

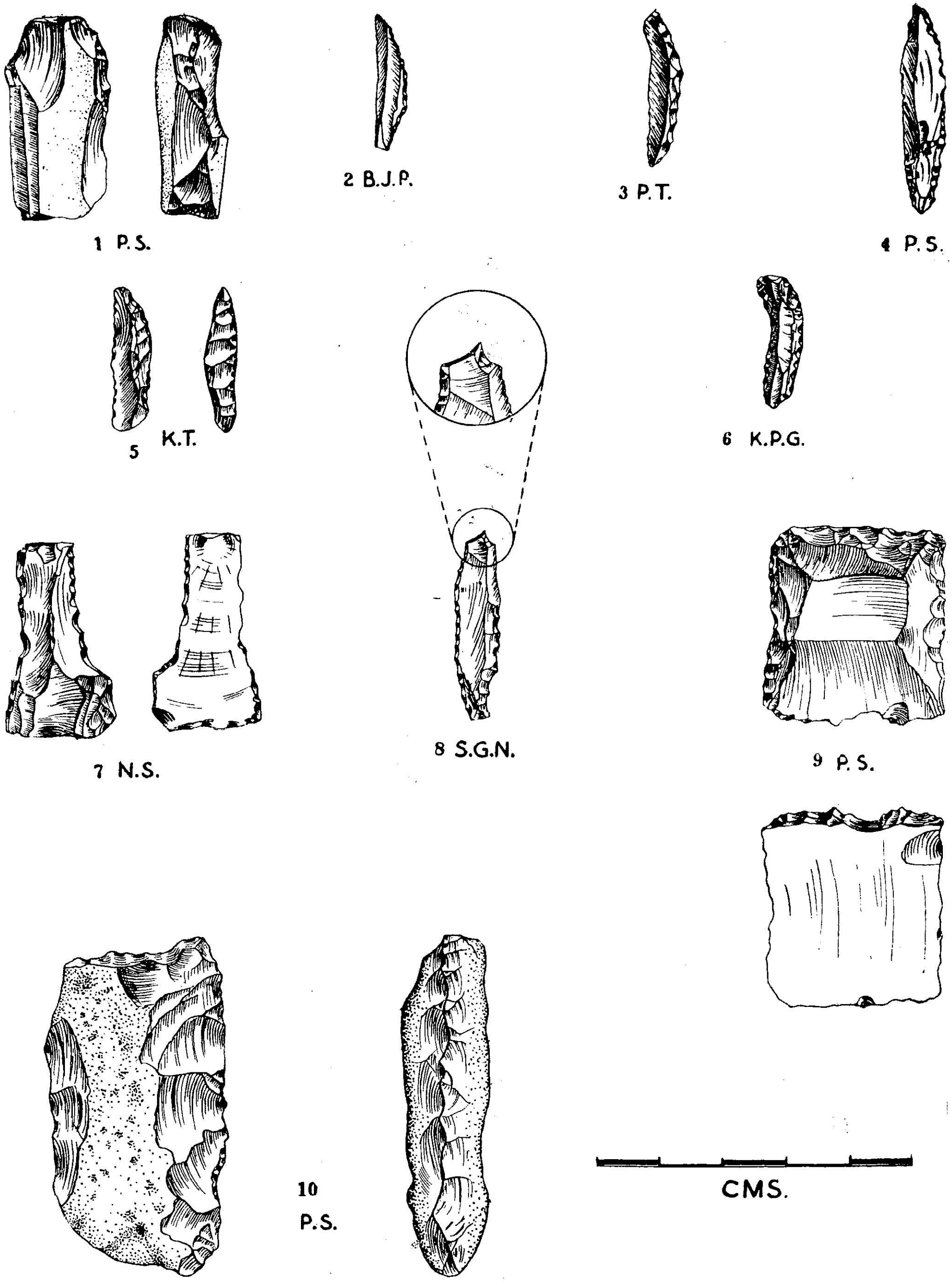


Fig. 59a. Microliths from other Godavari sites, including some new Types (7-10),

(*See p. 156*)

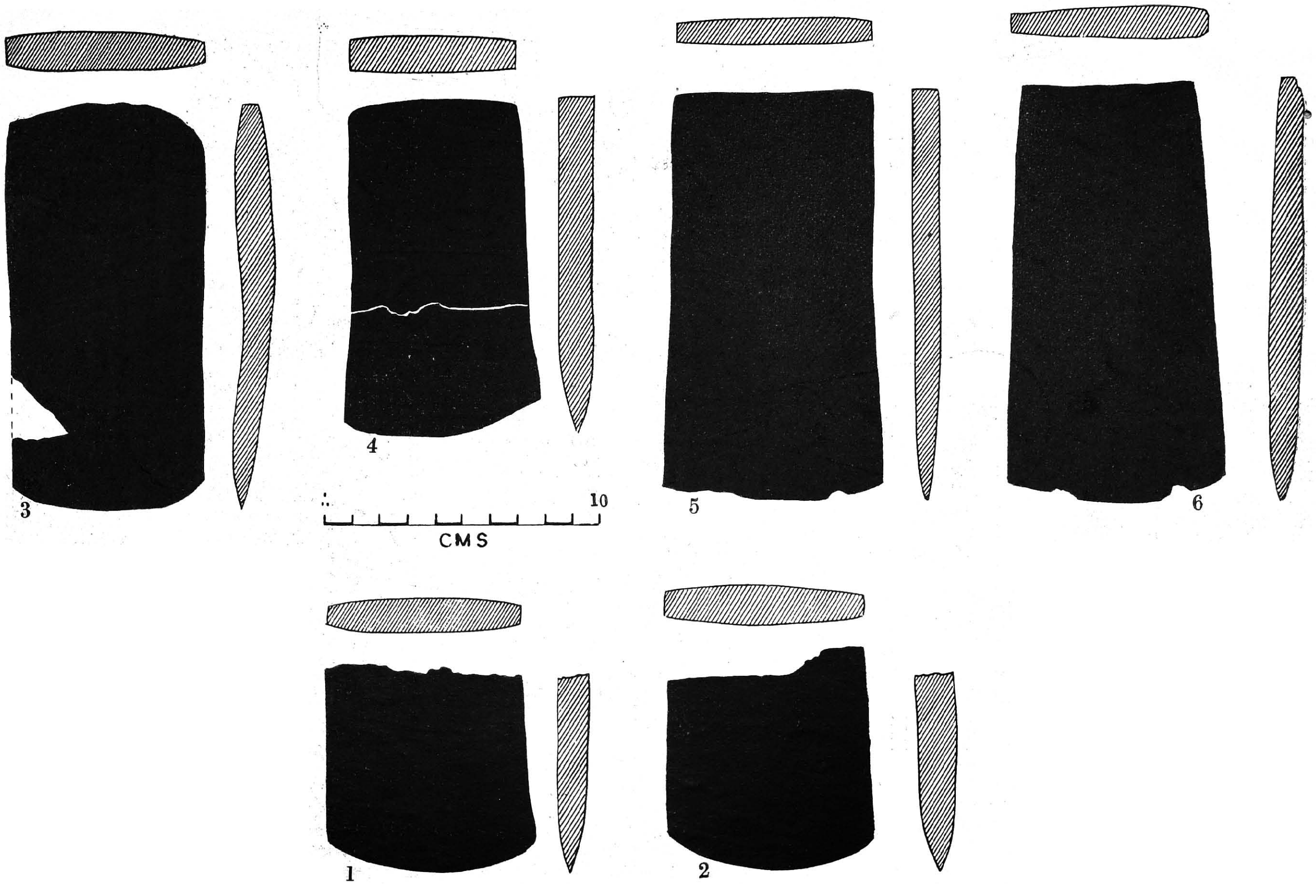
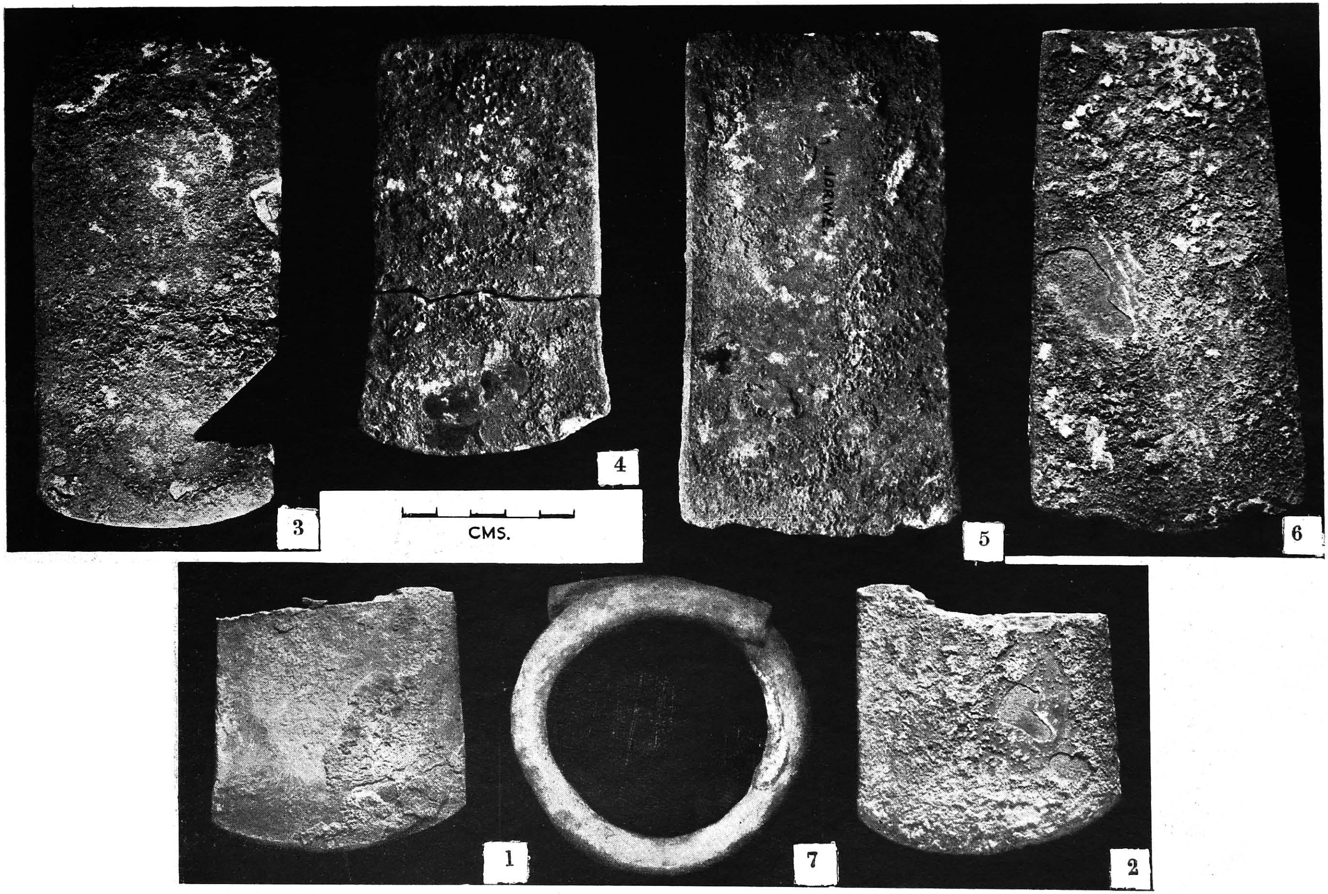


Fig. 60. Six flat Bronze-axes from Jorwe (unstratified).

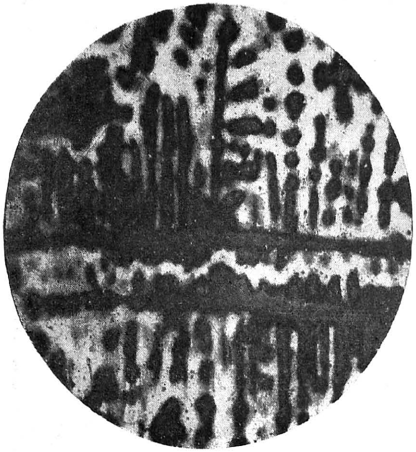
(*See p. 157*)

PLATE XXXIII



Flat low-grade Bronze-axes and a Copper-bangle from Jorwe (unstratified).

(*See pp. 157-60*)



a (axe) x 45

Microscopic photo of the Bronze-axe and the Copper-bangle

(*See pp. 158-59*)

b (bangle) x 110

APPENDIX I

Sites with Painted Pottery and Microliths of the Nasik-Jorwe Type in the Godavari Valley.
(*See Frontispiece*).

This list was originally prepared with the information kindly supplied by Shri M. N. DESHPANDE, Superintendent, Archaeological Survey, Western Circle. It has been brought uptodate, and the information checked and much amplified by a survey financed by the University of Poona. Details of the survey will be published in a separate report in the University's Journal. Here only a few important points are mentioned, and some totally new types are illustrated.

Nasik District :

Bhojāpur :	On the right bank of the Mahālungi river, beyond Nalvādi.	Microliths and painted pottery.
Dhoki :	1½ mile, south of Sinnar on the Sinnar-Ṭhāngaon road.	Microliths, painted pottery & pottery with graffiti.

Ahmednagar District :

Ghārgaon :	On the Mulā river, about 15 miles south of Sangamner, on the Poona-Nasik Road.	On the alluvial mounds north of the river, chalcedony flakes are found, which include some lunates.
Jorwe :	On the Pravarā.	Painted pottery & microliths.
Kokamṭhān:	On the bank of the Godāvari, about 4 miles south-east of Kopargaon.	Mainly chalcedony flakes, with lunates and other blades in black soil. A one-period site. No pottery was found.
Kopargaon:	On the bank of the Godāvari.	Hundreds of chalcedony flakes with painted pottery lie in black soil. It seems to to be a one-period site.
Nevāsā :	The site known as Lā. Moḍ.	Painted pottery, microliths and debris of later period.
Pravarā-Sangam :	By the side of the Inspection bungalow.	Painted pottery and microliths.
Sangamner :	About a mile from the town on the Poona-Nasik Road.	The area known as 'Police ground' consists of small-brownish alluvial mounds. These are strewn with flakes of chalcedony and other material, besides a few blades.

East Khandesh District :

Bahāl :	On the Girṇā River.	Painted pottery and microliths. This was excavated by Shri M. N. DESHPANDE. The sequence is more or less the same as at Nasik.

Chāngdev :	On the confluence of the Tāpi and the Girṇā.	Microliths.
Pāṭaṇ :	At the foot of the hill to Pitalkhorā caves.	Microliths.
Hyderabad State :		
Paiṭhaṇ :	Further eastwards on the Godāvari, at present in the State of Hyderabad.	Painted pottery & microliths in the black soil layer below the historic. We did not find any painted pottery here.

Some new types of microliths from other sites on the Godavari and its tributaries.

[FIG. 59a]

No. 1 Fluted core, roughly rectangular, having three parellel flake-scars on one side face and an irregular edge marked by some deep bold scars on its opposite. Dark brown chert. 32 mm. long, 16 mm. broad, 9 mm. thick. Pravara Sangam.

No. 2 Lunate blade, steep delicate retouch on the back, one end broken, Chalcedony. 22×4×1 mm. Bhojapur.

No. 3 Lunate blade, thick back, marked by steep retouch from either side, one end broken. Banded agate. 22×4×3 mm. Paithan.

No. 4 Probably a point, having steep retouch on only half of the thicker part of the flake, and partly on the other end. Chalcedony. 33×6×4 mm. Pravara Sangam.

No. 5 Lunate blade, as in No. 3, one end broken. Chalcedony. 22×8×4 mm. Kokamthan.

No. 6 Curved, hook-like, thick flake, having steep retouch on the back, and also on the partly hollowed edge. *A distinctly new type.* Chalcedony. 21×5×3 mm. Kopargaon.

No. 7 Probably part,—butt-end—, of a long, large, thick, arrowhead or dagger-like weapon, which had—as now extant—a shouldered-tang, characterized by fine, steep, retouch. The broken wider end of the blade seems to have been used as a scraper. Fine, glossy, milky, Chalcedony. 32×17 & 10×5 mm. Nevasa.

No. 8 A point on a thick flake, having a tang which is partly broken. The thicker, vertical side, as well as a part of the sloping front and the sides of the tang are retouched. The sharp projecting point is intentionally made by removing a flake from either side. Chalcedony. 30×7×2 mm. Sangamner.

No. 9 Rectangular scraper on a thick flake, having a perfectly flat—without bulb—undersides, and a stepped top, which is also flat, and unworked. Except one, however, the three of its sides are beautifully retouched, either with the intention of having edges on them or blunting them for use, whereas the fourth is not retouched from the top, but presents an uneven edge, because of retouch from the underside. Smoky Chalcedony. 32×26×9 mm. Pravara Sangam.

No. 10 Side scraper, on a thick rectangular nodule. The edge is made by bold alternate flaking, whereas the back is partly flaked for a suitable finger-hold. The rest of the surface retains the uneven cortex. Smoky Chalcedony. 55×28×13 mm. Pravara Sangam.

VI

Bronze Axes and Copper Bangle

In all six axes were found. [pl. XXXIII, 1-5, 7 and Fig. 60]. Four of these (Nos. 1-2, 3, 6) are in the Deccan College collection, and the rest (Nos. 4-5) are in the collection of the Department of Archaeology, Western Circle, Baroda. It is due to their courtesy that they are published here.

The weights and measurements of the axes are as follows :—

No.	Weight in ounces.	Length mm.	Breadth mm.	Thickness mm.
1	11.8	69 (broken)	73	12
2	13.0	66 ,,	75	12
3	26.2	142	72	13
4	21.9	143	78	10
5	25.3	120	66 (ancient break)	13
6	23.3	144	71	9

Excepting axes Nos. 1 and 2 which are almost broken in half, others do not differ much in size or in weight. All the axes may be described as flat with a section biconvex at the edge, nearly so towards the butt, but comparatively thick in the middle. The ends are thus tapering but more towards the edge than those at the butt. The sides are straight, but slightly narrower in Nos. 4 and 6. The edge is almost convex, in all cases, but in No. 6 looks less so, because it is uneven due to use. There are two large concavities in the edge of No. 6. The butt-end in No. 3 has one corner rounded, while in No. 5 it is perfectly straight and nearly so in No. 6.

All the axes when found were covered with a fine, thin, green patina.

At the instance of my former colleague Dr. M. G. Dikshit, Messrs. B. R. Pathak and M. K. Medhekar of the Engineering College, Poona, kindly examined axe No. 3. Microscopic examination and chemical analysis of this piece and the bangle showed that the axe was cast from molten metal.[1] It has 1.78% of tin and 98.04% of copper. They, therefore, conclude that the axe is a low grade alloy of bronze. Though the outside surface is slightly oxidized and has a thin greenish patina, the freshly cut surface is reddish yellow.

1. Their report is given in the Appendix II.

Nowhere except in the Indus and Baluchistan sites,[1] have copper axes been found in a stratified context. A study[2] of those hitherto recorded indicates that " those outside the Indus area are thick sectioned, with a narrow butt, and a wide blade, while those from the Indus sites have nearly parallel sides and a thinner section."

If we compare the Jorwe axes with those from these two main groups, all would compare more favourably with the Indus type, except Jorwe No. 6, though the average thickness of their section is at least 2 mm. more than that of the axes in the Indus group. Even in axe No. 6, the sides are only slightly narrow, but not so narrow as in the Chanhu-daro specimen,[3] and the edge is not flaring. Even at Mohenjo-daro[4] and Harappa,[5] there are instances, where the edges are flaring, and sides slightly indented.

From the extra-Indus Indian sites, the specimens with which the Jorwe axes may be compared are from the U.P. sites, particularly those from the districts of Bijnor, Mainpuri, Bithur, Shahjahanpur, and Pondi in Rewa District (Vindhya Pradesh) published by Vincent SMITH,[6] Hiranand SASTRI[7] and LAL.[8] In many of these axes, the sides are nearly parallel, and the edges convex or crescentic, though in section they might be thicker.

Copper Bangle

There is nothing particular to report about the copper bangle. It is of pure copper, and ring-like in shape.

From the limited nature of the evidence noted above, it seems that it is difficult to draw more definite conclusions regarding the age of the various copper axes merely on the basis of typology. For the present it may be said that the Jorwe axes belong to a proto-historic phase, on which more light is likely to be shed by the evidence of pottery.

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1. GORDON, D. H. " The Early use of Metals in India and Pakistan " *JRAI.*, Vol. LXXX (1950), p. 61.
2. *Ibid.*
3. MACKAY, Ernest, *Chanhudaro Excavations*, 1935-36 (1943), pls. LXX, 30, LXXVI, 4.
4. MARSHALL, John, *Mohenjo-Daro and Indus Civilization*, pls. CXXXIX, 4, CXXXVIII, 3.
5. VATS, Madho Sarup, *Excavations at Harappa*, Vol. II, pl. CXXIII.
6. SMITH, Vincent, *IA*. XXXIV (1905), p. 232.
7. SASTRI, Hiranand, *JASB*. XI (1915), pls. I-V, pp. 1-6.
8. LAL, B. B., '' Further Copper Hoards from the Gangetic Basin, etc." *Anc. Ind.*, No. 7 (1951), pp. 20-38.

The bangle, as the chemical analysis tells us, is of pure copper. It is of a simple type, nearly round with overlapping ends, made out of a solid cylindrical rod, 12 mm. in diameter and 32.2 mm. long. The inside diameter of the bangle is 59 mm. (pl. XXXIII, 6).

APPENDIX II

Report on Copper Celt and Bangle

by

Shri B. R. Pathak and Shri M. K. Medhekar,
College of Engineering, Poona.

Two copper pieces were sent to this Laboratory by the Deccan College Post-Graduate Research Institute, Poona, for metallurgical examination.

The results of microscopic, chemical and physical examination of these pieces are given below :

(A) *Copper Axe*

(*a*) Shape—the piece as received in this laboratory was a broken piece from the axe, broken along A-A[1].

(*b*) Fracture—The fracture along A-A[1] was irregular and indicated that the piece may be a cast specimen.

(*c*) Colour—The outer surface was slightly oxidised. The freshly cut surface of the piece for metallographic examination was a reddish-yellow, like that of low alloy bronzes. This was further confirmed when drillings were taken for the chemical analysis.

(*d*) Microscopic Examination—One sample was examined as such and the other after annealing at 700° C for 3 hours.

(i) Original piece : As seen from the photomicrograph (1) the structure is dendritic confirming the observation under (b) that the axe was cast from molten metal. Under high magnification the dendrites showed cored structure. Some dark particles and a pale blue constituent were also seen under high magnification. The dark particles are presumably oxide particles and the pale blue ones are slag particles.

(ii) Annealed piece : After annealing for 3 hours at 700° C. the dendritic structure had completely disappeared, giving place to polygonal structure containing a large number of twinned crystals.

(*e*) Hardness and Grain-size

As cast	77.5	D.P.H.
Annealed	52.9	D.P.H.

Grain-size of annealed piece—0.065 mm. dia. A.S.T.M. Standard.

(*f*) Chemical Analysis—Qualitative tests showed that tin was present in the sample. The quantitative determination of tin on a 0.5 gm. sample by the gravimetric method gave a tin content of 1.78%.

Copper was determined volumetrically by the iodine method and gave a Copper content of 98.40%.

It is intended to confirm these results by spectro-scopic analysis at a later date when the presence of traces of other elements will also be investigated.

(*g*) Conclusion—The material of the axe is a cast low tin bronze. It is doubtful that the addition of the 1.78% of tin was intentional. The tin is more likely to have entered during the smelting of the ore. This tin content, however, must have lowered the melting point of copper by about 10° C. Another very interesting thing was noted during the microscopic examination of the original piece. Very small twinned crystals were near the surface of the narrowed section, although the structure at the centre was dendritic. The presence of these twins can only be explained by very slow annealing during these years of the heaviest worked portion of the axe. The appearance of twinned crystals in the annealed piece confirms that the axe was first cast and then worked to the required size and shape.

(*B*) *The Copper Bangle.*

(*a*) Shape—The bangle is made from a rod of approximately circular cross-section 5/16" diameter and 7" long. The inside diameter of the bangle is 2¼".

(*b*) Fracture—The newly cut surface of the bangle was bright red, typical of pure copper.

(*c*) Colour—The outer surface was somewhat oxidised. The drillings were bright red.

(*d*) Microscopic Examination—The structure was not changed by annealing at 700° C for 3 hours and is shown in photomicrograph (2). The grains were polygonal showing a large number of twinned crystals. Under high magnification, dark as well as pale blue particles were also seen in this sample, like those in the axe specimen.

(*e*) Hardness and Grain-size

Original	60.3	D.P.H.
Annealed	60.2	D.P.H.

Grain-size—0.065 mm. dia. A.S.T.M. Standard

(*f*) Chemical Analysis—Qualitative testing gave no indication of tin or any other constituent. The Copper content as determined by the volumetric method was 99.0 %.

(*g*) Conclusion—The bangle has been made from a cast rod which has been reduced to the necessary length and diameter. The twinned crystals in the original piece indicate that annealing has taken place. It is not possible to say if this was intentional or otherwise. Even if the annealing was intentional it is doubtful if the basic principles involved were understood. Another possibility, that annealing is due to prolonged burial cannot also be overruled.

VII

POTTERY[1]

The main bulk of the pottery-collection from Jorwe consists of sherds—mostly shoulder pieces—too fragmentary to indicate the shapes

1. This section is prepared by Dr. A. V. NAIK, a former Research Assistant in the Department.

that were employed in the various classes of the Jorwe ware. However, there are many rim-fragments, about a score of spouts, some lid-pieces and a few nearly complete pots, on the strength of which, it is possible to indicate to some extent the range of pottery-types in vogue in those days.

General Features

Barring a few very large storage jars, very small pots, and lamps and dishes which are hand-made, the pottery is wheel-made. Moreover the remarkable evenness of wall-thickness and the fine, regular, concentric striations between bold, parallel ridges on the inside surface, noticed in the case of a large majority of pottery-pieces, appear to indicate general use of the fast-wheel.

Though most of the sherds and rim-pieces are tough and give a high metallic ring, it is found that the control of firing, except in the case of small and medium sized bowls and thin-walled vessels, was imperfect. The degree of heat applied in firing or its duration was insufficient to effect an even change in the colour of the clay, and even failed, in a number of cases, to penetrate into the core of the wall. Consequently many sherds show laminated structure in the fracture and a difference of colour in the thickness of the body. In these, the core has retained the natural colour of the clay and is flanked by one or more external layers on either side, which, being better burnt than the core, are of light to dark shades of red, brown or tan. Subject to this, therefore, the pottery may be said to be well-baked generally and, in not a small number of cases, where complete fusion of the clay particles has occurred and partial vitrification has taken place, hard-baked or even over-baked.

Clays

An examination of the core colours revealed that at least three different kinds of clay were used—red-brown, grey, and black—which under conditions of thorough oxidization burnt red. These clays appear to be alluvial[1] and have a natural admixture of fine sand and, therefore, require little or no tampering material. Indeed, except in the case of very thick ware vessels, no trace of any use of tamper is found. While all the three kinds of clay were used in the manufacture of thin pots and pots of medium thickness, in the production of thick-ware, generally the black clay was preferred. The natural colour of the latter was perhaps further

1. The Jorwe pottery is being scientifically examined, so these inferences should be regarded as tentative (H.D.S.).

enhanced by mixing with it some carbonizing organic substance such as cow-dung or charcoal as some examples show traces of carbonized material. Sherds of thin ware constitute a major portion of the present collection. Does this phenomenon suggest that there was a general predilection for thin ware ? Whatever the case was, the clay of this pottery appears to have been selected with greater care and a special paste, very close in texture, prepared with the result that the pot-walls are decidedly thinner.

Nearly all the pottery of Jorwe is made of local clay, its three kinds being available in abundance in the vicinity of Jorwe and in the middle and western parts of the northern half of the Ahmednagar District. This tract of land lies in the valley of the Pravara between two parallel spurs of the Sahyadris and is traversed by nearly a dozen tributaries of the Pravara. The soil along the banks of these rivers—particularly those of the Pravara— is extremely rich and clayey and resolves itself in three varieties: *Kāli* or black, *tāmbat* or red, and *barad* or grey, all noted for their more or less ferruginous character. In such favourable condition Jorwe appears to have developed as a centre of the potter's craft, in remote times.

Shapes

The great majority of the vases of Jorwe have rounded bases. About half a dozen examples of the flat-base were also noticed from which it appears that only lamp-dishes, some pans and basins and larger storage jars had flat bases. Generally, the rounded-base was treated carefully along with the upper portion of the pot, but the flat base was neglected and left rough.

Technique

The method commonly used in shaping was that of modelling and the pots were made in one piece. But there are instances which suggest that recourse was frequently taken to the 'building' method as well. Many fragments of bowls and globular vessels have broken along the neck—or—shoulder-line or at the carination. This perhaps indicates that they were 'built' in two or more pieces. At any rate, the acutely carinated pots were certainly shaped by modelling and building in conjunction. Not a single instance suggesting the use of the moulding or coiling methods was noticed.

Slips

Slips are fairly common and a large percentage of pottery is covered with a slip on both sides. Totally unslipped instances are few, but the very

thin, slip-like layer noticed in some cases and regarded as slipped may be the result of the smoothing process and not an applied slip. In a number of cases only the exterior surface is endowed with a slip. Very often a thin wash of a darker shade or of a different colour appears to have been applied on the exterior slip to form the background of the painted design. The slips are generally well-levigated, fine in texture and rich in adhesion. Where they are gritty, they contain particles of lime and shining grains, perhaps of quartz. Whether thick or thin, the slips and washes were, as indicated by the fine, parallel, concentric lines, applied with fine-haired, flat brushes or smoothed with them, while the pot was wet and rotating on the wheel. The application is skilful, as the surfaces are generally uniform and show no pits or crevices. The exterior surfaces, after they were slipped, were smoothed so that all the striations were obliterated. The use of the burnisher is very little indicated in the case of thin and medium ware, as the surfaces of these sherds are matt. The thick black and tan slipped ware has, however, mostly burnished surfaces. The slips are of two main colours—red and black—and show various shades of the former in combination with yellow and brown.

Decoration

The occurrence in the collection of the plain and decorated potsherds in large quantities, perhaps indicates the simultaneous prevalence of both the kinds of ware. As a matter of fact a comparison between the sherds of corresponding thicknesses from the two groups shows that except for the decoration, they are alike in their composition, fabric and slip. The decoration is either painted, stamped or incised, and in a few cases, cut. It is interesting to see that painted decoration is restricted only to the ware whose thickness is below 15 mm., while it is generally the ware of greater thickness that is decorated with stamped or incised ornament. This scheme appears to have arisen out of consideration for the capacity of the pot-wall to withstand the thrust of the stamping or incising instrument. This seems to be borne out by another phenomenon, noticed above, that while the surfaces of the thick ware are burnished, the ware of lesser thickness has almost invariably matt surfaces. Polish is totally out of the picture.

Painting

The painted design was applied on smooth, matt surface and the colour used is black. The painting is, without exception, monochromatic and was generally disposed in horizontal panels running round the neck,

shoulder, belly or corresponding parts of the pot. The space covered by the painting never extends beyond the centre of the pot or the carination ridge of the bowl. Pots painted over the whole exterior are totally absent, whereas interior decoration other than the rim band occurs on extremely few examples.

Designs

The painted designs show a strong bias towards linear and geometric patterns, though a few fragmentary examples indicate the presence of some plant and floral designs. Animal—including human—designs are conspicuous by their absence. The employment of horizontal bands of one or more simple painted lines of varying thickness emphasizing one or more members such as lip, neck, shoulder or belly [See Types 1, 6, 7, 9, 10, 12, 13, 14, 16, 17, 19, 21, 22, 24] or as terminal or intermediate borders [See Types 4, 5, 6, 9, 12, 13, 15, 17, 18, 19, 20, 21, 22, 23—30 etc.] is most common. Equally common, especially on bowls, is the simple pattern formed by connecting long horizontal line-bands with closely grouped verticals or diagonals [See Types 5, 9, 12, 13, 15, 17, 18, 19, 20, 21, 22, 23, 24, 25—30, 32, 33 etc.]. The use of straight or curved diagonals or oblique brush-strokes and broad vertical line-bands as space-fillers [See Fig. 79, 1, 2, 3, 4, 7, 8, 10, 11 ; Fig. 82, 4] also appears to have been a much respected convention. The zig-zag pattern between horizontal line-bands appears to have been a favourite design for the decoration of shouldered, globular vessels [See Fig. 79]. The wavy line and the zig-zag make frequent appearance both as horizontal and vertical space-fillers [See Fig. 79, 5 ; Fig. 81, 4, 5, 11 ; Fig. 80, 12 ; Fig. 81, 8, 9 etc]. Other designs comprise festoons [See Fig. 83, 1 and 2], the lattice or the criss-cross pattern [See Fig. 79, 9 and 11], horizontal bands of connected, cross-hatched or solid rhomboids or lozenges [Fig. 80, 5 to 12 ; Fig. 82, 11], cross hatched triangles [Fig. 83, 5], and squares [Fig. 82, 15]. Special mention must be made of the design formed by a combination of the horizontal line-band, the loop or the zig-zag pattern and oblique or vertical strokes occurring mostly on shouldered vessels. This design though made up of linear motifs, gives the impression of a dense growth of grass and, therefore, called 'grass' pattern—[Fig. 82, 3-6]—very likely possesses some symbolic value connected with the plant-world. There are also a few miscellaneous designs, among which some suggest floral and leaf patterns [Fig. 82, 12-13 ; Fig. 83, 9]. The other kind of decoration occurring mostly on thick ware pots consists of deeply incised criss-cross lines

[Fig. 85, 4-5], relieved concentric rings or ridges with pierced holes along the slopes, [Fig. 84, 1, 2, 3], notches [See Types 68, 75, 77, 78], gauge-marks [See Type 84], pinched lip [See Type 81] and stamped finger-tip and finger-nail impressions [See Types 67, 69, 70, 83, 86, 87, 71, 76, 80, 92, 88, 72, and Fig. 85, 86, 87, 88].

Classification

Since the collection was later mixed up, it is not possible now to study it layerwise or statistically. Therefore, it is classified, for the sake of convenience, into three broad groups, viz. (a) Painted Pottery, (b) Decorated Pottery, and (c) Plain Pottery, and the range of pottery-types is indicated in the following pages through them. In determining the pottery-types, not only the shape and the characteristic structural features of the pot, but the size, thickness of the wall, the kind of clay and the slip have also been taken into consideration.

Types

Jorwe pottery is predominantly utilitarian and comprises a very small range of types. In the class of painted pottery the carinated bowl with rounded base is the most common type. The carination is generally medium, but acute and blunt forms also occur. Most frequent are the bowls with concave-profiled upper portion i.e. body above the carination. Next in frequency are bowls with inturned sides. Bowls with flaring sides and bowls with almost perpendicular or vertical sides (though showing concave profile) also occur in appreciable quantity. The other common type seems to be the shouldered, globular jar with short, tapering or concave neck, though no complete example of it is available. The funnel-necked, wide-mouthed carinated vessel furnished with a funnel-spout also appears to be equally common in this class of pottery. Other painted types are : cups, shallow dishes, small basins, wide-mouthed water vessels and lids.

The remaining two classes, viz. decorated and unpainted pottery, have many types in common, such as :—Bowls of convex and vertical profiles, convex and tapering-sided basins, carinated cooking vessels and large, concave and tapering necked—shouldered—jars. Attention may also be drawn here to the large, rimless bowl with a funnel-spout [Type 50], the lid-cum-dish [Type 108], the tiered pot or ring stand [Type 109], (see also the ring stand [Type 110]), which are rare and unique types in this collection. A few sherds of painted saucers or dishes, too fragmentary

to indicate the size and shape, have also been noticed. The collection also contains some fragments of solid knob-handled lids [Fig. 78].

Finally a reference must be made to the few examples of painted and scratched potter's marks found on bowls and carinated jars.

The description of pottery types, selected sherds and other pot-members follows the scheme mentioned below :—

(a) Painted Pottery (Types 1 to 66), [Figs. 61-69].
(b) Decorated Pottery (Types 67 to 89), [Figs. 70-73].
(c) Plain Pottery (Types 90 to 127), [Figs. 74-77].
(d) Painted Sherds [Figs. 79-83].
(e) Decorated Sherds [Figs. 84-85].
(f) Spouts and Lid Handles [Fig. 78].

Painted Pottery

[The specimens described below are wheel-made and hard-baked, unless otherwise stated].

Fig. 61 and Pl. XXXIV

These illustrate painted vessels—funnel-spouted-and-necked pots, bowls with carinated shoulders and comparatively tall and narrow mouthed globular vessels—which were found prior to regular excavations. In the latter were found only sherds illustrating these shapes and fabrics (types 12-51 and 54). The vessel [Fig. 61, 2] is with the Archaeological Department, Western Circle, Baroda. No. 4 (pl. XXXIV) is a potter's mark found on a stratified sherd.

Fig. 62 (Types 1-10)

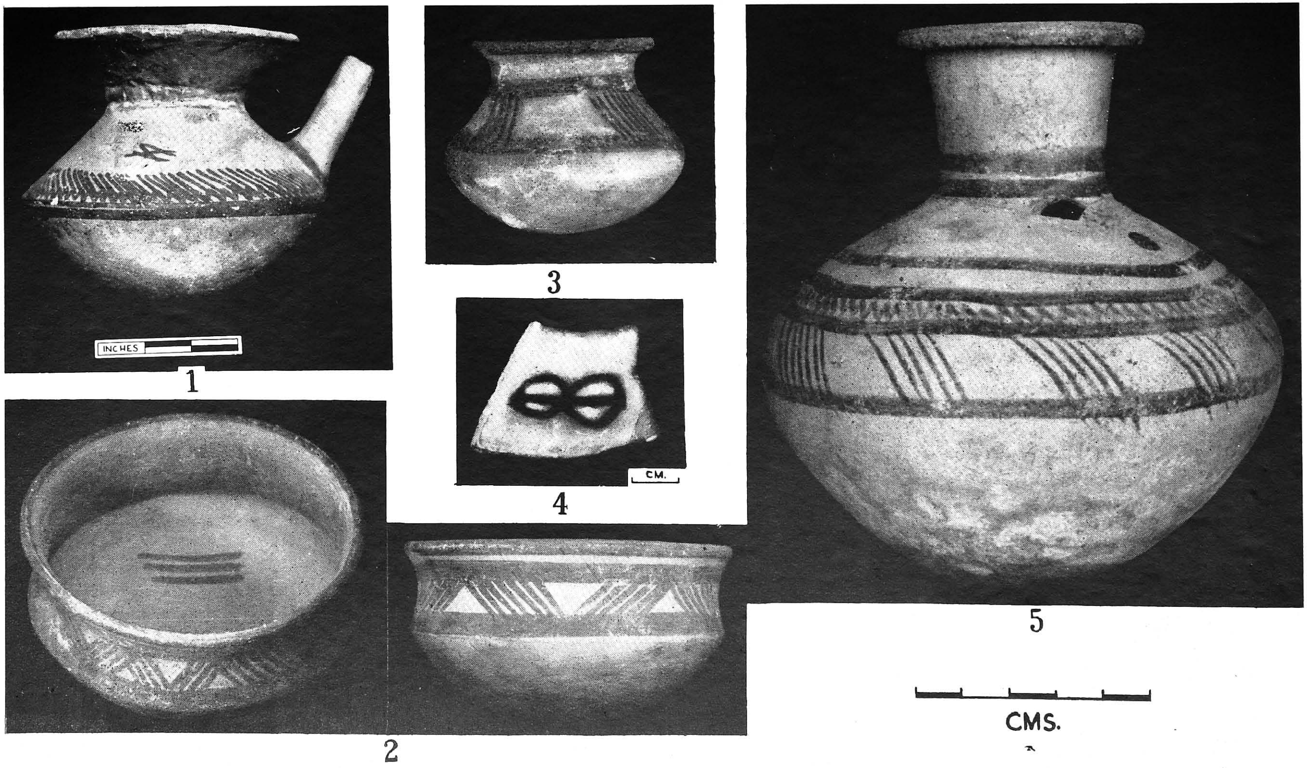
Type 1 (Jrw. 3283) is a thick-walled (cup ?) with a thickened, rounded and slightly out-turned rim. Tan or brick ware of medium fabric covered with a gritty red slip both inside and out.[1] Both the surfaces are rough and matt. The inner edge of the rim is painted with a broad black band.

Type 2 (Jrw. 3270) is a plain rimless *cup* of medium-grained brick ware, medium fabric, well-levigated dark red slip.

Type 3 (Jrw. 2/3155) is a *cup* or a deep *bowl* with its wall slightly corrugated and tapering upward. Fine grained light-grey ware, medium fabric treated with a red slip. Black band round the belly.

Type 4 (Jrw. 2/2491) is a deep *bowl* with a slightly out-turned and internally rounded rim and two grooves on the exterior just below the rim. The wall has an internal bulge a little below the rim and then it gradually thins upto an incised line on the inside of the belly. Medium grained brick ware, gritty red slip. Decorated on the exterior burnished surface with groups of vertical lines within a broad horizontal zone running round the pot and bordered by black bands.

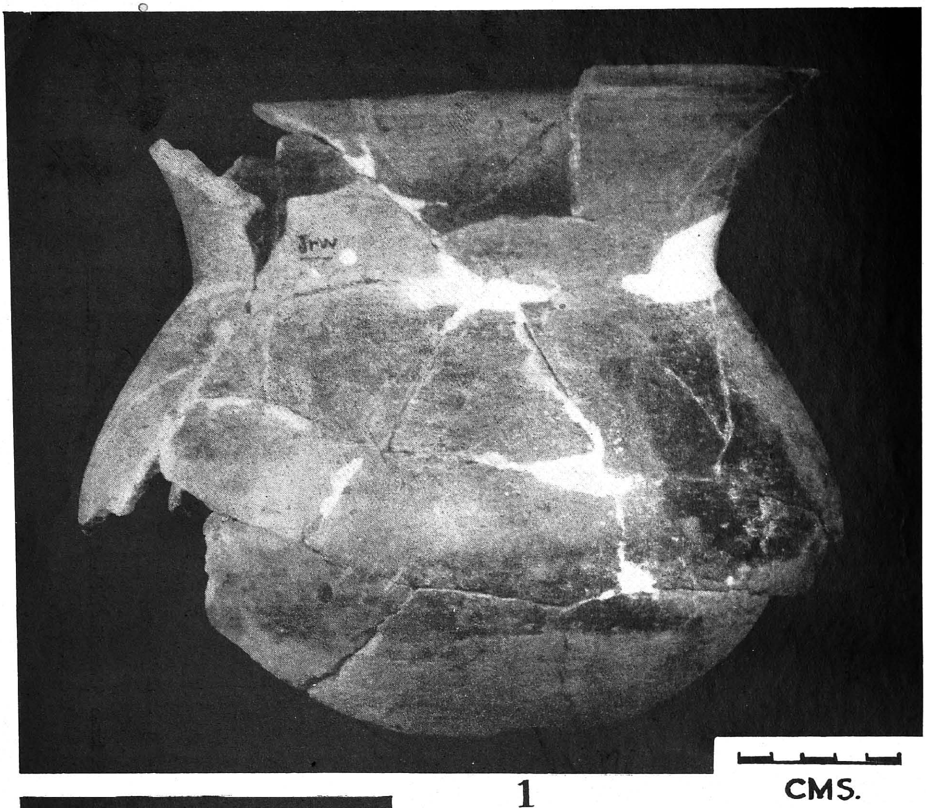
1. The slip is generally on both the surfaces, so henceforth the details will be omitted from the description.



Complete Painted Pottery vessels from Jorwe (Unstratified). No. 4. Potter's mark on a sherd (Stratified)

(*See p. 166*)

PLATE XXXV



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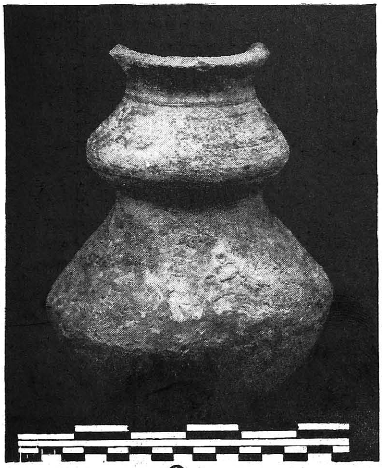

3

2

Grey ware vessels (Stratified) and No. 3 a double Pot (Unstratified)

(*See pp. 173-176*)

Type 5 (Jrw. 1/165) is a small *bowl* with flaring sides, thinned at the edges. Light tan ware of medium fabric, orange coloured slip. Both the surfaces are matt and rough. Black band along the inside of the rim at the edge and three vertical brush strokes, perhaps from the outer edge of the rim terminating at a thin horizontal band slightly below the fullest bulge of the belly on the exterior. Handmade.

Type 6 (Jrw. 3221) is a thick-walled *dish* with inturned sides and a sagger base. Fine grained light tan ware of medium fabric, pink-red slip. A simple pattern formed by opposite groups of oblique lines or diagonals joining horizontal lines.

Type 7 (Jrw. 2/3137) is a thin-walled *dish* having flaring sides, with a broad shallow groove below the rim on the exterior. Medium grained tan ware covered with a well-levigated red slip. Traces of black bands remain on the edge of the rim and at the middle of the wall on the outside.

Type 8 (Jrw. 1170) is a thick-walled *dish* having flaring sides, with a slightly convex profile. Its upward thinning wall terminates with a rounded edge. Fine grained, tan-burning grey ware covered with a thin red slip on the outside only. A wavy line running horizontally round a little above the mid-line.

Type 9 (Jrw. 1/160) is a *basin* having a slightly convex or curvilinear profile and a thick voluted and beaked rim. Coarse grained brick ware of medium fabric covered with a thick dark-red slip. Both the surfaces are rough and matt. A broad band on the voluted portion of the rim and broad oblique bands painted on the inside surface.

Type 10 (Jrw. 2/3204) is a shallow *basin* with bulging sides and an externally beaded rim. Fine grained light grey ware, well levigated red slip. Two horizontal bands—one just below the rim and the other round the line of the bulge.

FIG. 63 (*Types 11-23 Bowls*)

Type 11 (Jrw. 1/10) is a *basin* of bulging profile with a rolled and undercut rim. Fine grained tan burning brown ware, well levigated tan slip. The exterior shows traces of burnishing.

Type 12 This and the rest—though varying in size and design are best illustrated by a complete unstratified specimen.

Thin or generally thick walled bowls having concave profile, rounded base, slightly flaring mouth, thickened rim with bevelled, or rounded edges. Fine grained tan ware, well levigated, dark-red, yellow, slip on both surfaces which are matt. The essential shape rarely varies, but the slips and designs differ. These are mentioned below :

Type 12a (Jrw. 1774) is thin walled small *bowl* of concave profile, red slip on both surfaces which are matt. The design on the exterior formed by groups of diagonals joining a broad band below the rim and a thin line at the carination, the rim emphasised by a black band. [See Fig. 65 ; pl. XXXIV, 2].

Type 13 (Jrw. 937) *Bowl* having rounded edge and dark red gritty slip. The design, formed by a broad horizontal band overlapping slightly the interior of the rim, a thin line running round the upper slope of the carination ridge and groups of slanting and vertical brush-strokes joining the two on the exterior ; a band also round the lower slope of the carination ridge.

Type 14 (Jrw. 1163) is a thin-walled *bowl*, yellowish red slip. The rim emphasised by an overlapping band ; a wavy line forming acute angles round the middle of the body.

Type 15 (Jrw. 1095) *Bowl* with rounded rim having a groove, dark-red slip. The painted pattern is similar to that on Type 12a, but here a plain horizontal zone intervenes between the rim and the design.

Type 16 (Jrw. 1098) *Bowl* with rim having slightly sharpened edge. Dark-red slip containing shining particles of quartz on both surfaces. The rim emphasised by an overlapping band and the concave surface decorated with groups of oblique strokes and wavy lines in the metopes.

Type 17 (Jrw. 1502) *Bowl* with a rim having a sharpened edge. Pink slip on both surfaces. A band running round the inside of the rim and opposite groups of oblique strokes between the edge of the rim and perhaps the carination rim.

Type 18 (Jrw. 1099) *Bowl* having rounded base, very thin, slightly everted rim. Dark red slip. Design similar to that of Type 12.

Type 19 (Jrw. 2563) *Bowl* having very thin rounded base. Dark-red slip. The rim emphasised by an overlapping band while the exterior is decorated with a pattern formed by two horizontal bands joined by groups of thin diagonals.

Type 20 (2 Jrw. 1/2) *Bowl.* Red slip both inside and outside. The exterior surface burnished and decorated with a running series of opposite groups of slanting lines joining horizontal bands.

Type 21 (Jrw. 1062) *Bowl.* Fine grained light tan ware, well levigated purple slip. The rim emphasised with a band running round the outside and below it is the pattern formed by groups of closely drawn oblique lines joining a broad horizontal band and a thin line along the carination ridge.

Type 22 (Jrw. 1700) Thin-walled *bowl* with almost vertical side and flaring mouth and having an out-turned and beaked rim. Russet coloured slip containing particles of quartz. The rim emphasised with a band and the exterior surface is filled in with opposite groups of slanting lines joining the rim-band with the thick line at the carination ridge.

Type 23 (Jrw. 833) *Bowl* with a flaring mouth and simple rounded rim having a shallow groove round the interior below the rim. Medium grained slate-grey ware. Fine russet coloured slip. Broad band overlapping the inside of the rim, a thin line running round the carination ridge and opposite groups of diagonals joining the two.

FIG. 64 (*Types 24-32*)

Type 24 (Jrw. 2/3140) *Bowl* with rounded rim distinguished by two sharp ridges—one outside and the other a little below the edge on the inside. A thin russet coloured slip. Cf. Type 15.

Type 25 (Jrw. 1115) Externally beaded rim. Red slip. Cf. Type 24, above.

Type 26 (Jrw. 2/3133) Red slip. Cf. Type 23.

Type 27 (Jrw. 801) Thick red slip. The decoration of the rim and the exterior are similar to that of Type 19, but here a broad plain zone intervenes between the band below the rim and the pattern.

Type 28 (Jrw. 1231) is a vertical sided *bowl* with an out-turned beaded rim.

Type 29 (represented by Jrw. 2626) is a vertical sided *bowl* with a beaded rim.

Type 30 (Jrw. 2/3182) is a thick-walled, vertical sided *bowl* with a slightly out-turned, thickened and rounded rim. Medium grained brick-ware. Perhaps without any slip inside and out. There is a broad band on the interior running round below the edge of the rim and the exterior bears the usual pattern similar to that of Type 29.

Type 31 (Jrw. 1174) Well levigated pink-red slip. Decorated with a horizontal band and what appears to be a wavy line. The rim is painted with a band overlapping both the sides.

Type 32 (Jrw. 3236) *Bowl.* Thin russet coloured slip. The exterior is painted with the design consisting of opposite groups of slanting lines joining horizontal bands while the rim is decorated with a band overlapping both sides.

FIG. 65 (*Types 33 to 36a*)

Type 33 (Jrw. 3112) *Bowl.* Dark-red slip. Cf. Type 19.

Type 34 (Jrw. 2866) Similar to Types 19 and 33 (Jrw. 2563 and 3112) described above with slanting lines to the right. Perhaps the 'Ladder' scratched on the interior surface is the potter's mark.

Type 35 (Jrw. 2801) *Bowl.* Well levigated orange-coloured slip. A black band along the top of the rim, otherwise plain.

Type 36 (Jrw. 2/3136) *Bowl.* Red or rather amber coloured slip. The exterior perhaps burnished and bears two parallel horizontal bands just above the carination and a thin band painted along the inside of the rim.

Type 36a Unstratified but complete *bowl* with empty triangles alternating with oblique lines probably as in Type 44 described below with three thick horizontal potter's (?) mark inside.

FIG. 66 (*Types 37-46*)

Type 37 (Jrw. 3290) is a small, thin-walled, acutely carinated, shallow *bowl* with a tapered and flanged rim. Chocolate slip inside and a buff wash outside and on both sides of the rim. Overlapping rim-band and diagonal cross-hatching between two parallel horizontal bands covering the whole exterior from the carination ridge upto the base of the rim.

Type 38 (Jrw. 3245) *Bowl.* Comparatively thin-walled, well levigated dark-red slip. Closely drawn opposite groups of thin diagonals joining broad, parallel, horizontal bands on the exterior. The rim and the carination ridge also emphasised with overlapping bands painted on them.

Type 39 (Jrw. 2/3202) is a thick-walled *bowl* with slightly flaring rim, and bulging body. Thin red slip. A thin line along the upper edge of the rim and remains of vertical strokes.

Type 40 (Jrw. 2549) Comparatively thin-walled and straight-sided. Dark red slip. Cf. Type 21.

Type 41 (represented by Jrw. 929) is a thin-walled *bowl.* Grey-brown ware of extra-fine fabric. Well levigated red-brown slip. Cf. Type 15.

Type 42 (Jrw. 3293) *Bowl* with orange coloured slip. Two black bands—one along the inside of the rim and the other on the exterior along the carination ridge-extant.

Type 43 (Jrw. 1/217) *Bowl.* Comparatively thin-walled. Fine yellow-red-brown slip. Black band inside the rim, the exterior bears groups of slightly curved and slanting lines placed one opposite the other.

Type 44 (Jrw. 2/3240). *Bowl* with red slip. Cf. Type 21 (Jrw. 1062) and the complete Type 36a described above.

Type 45 (Jrw. 1060) *Bowl.* The inside of the rim bears a broad band and the exterior is decorated with opposite groups of thin slanting lines joining two bands, parallel and horizontal—one along the carination ridge and the other just below the rim.

Type 46 (Jrw. 1721) *Bowl.* Grey ware. Yellowish red slip. Cf. Type 14 (Jrw. 1163).

FIG. 67 (*Types 47-49*)

Type 47 (Jrw. 1173) *Bowl.* Purple-red slip. Broad overlapping band on the rim and a pattern formed by slanting border, a thinner band of unequal thickness covering the whole of the exterior from the rim to the carination ridge.

Type 48 (Jrw. 817) *Bowl.* Russet-coloured slip. Broad overlapping band on the rim and slightly slanting brush-strokes—which become broader near the base—joining the rim band with perhaps the band at the carination ridge.

Type 49 (Jrw. 1130) *Bowl.* Red slip. Cf. Type 21.

FIG. 68 (*Types 50-51*)

Type 50 (Jrw. 1/129). Large, thick-walled, rimless *bowl* furnished with a funnel-spout which forms an acute angle with the side of the bowl. It is of coarse-grained brick ware of medium fabric and is coated with a thick, well levigated red slip both inside and out. The spout is tubular ovaloid in section. The painting, which is quite carelessly done, consists of a broad band on the upper side of the spout, continued on the wall-exterior of the bowl upto the lip, from which point two thin bands run downward in the exterior and terminate, perhaps at the centre of the bottom. The lip is painted with an overlapping band. *A unique type at Jorwe.*

Type 51 (Jrw. 1/332) is perhaps a deep, thick-walled *bowl* with inward slanting side and an everted, tapered rim. Yellowish red slip. Besides the overlapping rim-band, the exterior decoration perhaps consisted of a horizontal series of double-bordered triangles or a double wavy pattern.

FIG. 69 (*Types 52-66*)

Type 52 (Jrw. 2668) Deep *bowl* with a flaring and externally grooved rim. Pink slip. Nature of design uncertain.

Type 53 (Jrw. 1096) Fragment of a thick-walled vessel, with a narrow neck, having flaring rim. Dark-red slip. Overlapping band on the rim.

Type 54 (Jrw. 1/112) Thick-walled concave neck of a vessel having an out-turned and externally squared rim with grooves on the under-surface. Medium grained brown ware. Tan slip. Horizontal band and lines at the rim and the neck line.

Type 55 (Jrw. 1068) Thin-walled vessel with a comparatively broad, high neck with an externally projecting, thickened and squared rim. Fine grained tan-ware. Red slip. Broad band on both the surfaces of the rim.

Type 56 (Jrw. 789) Almost identical in shape to Type 55, with two horizontal bands at the neck.

Type 57 (Jrw. 2468) Almost similar to Type 56, but of rather coarse-grained tan-ware. Red slip on the outside only. The inner surface is perhaps only smoothed. Two horizontal bands on the exterior at the neck.

Type 58 (Jrw. 1104) Very thin-walled vessel, with broad neck having an out-turned, thickened and externally squared rim. Light tan ware. Pink-red slip. Two horizontal bands at the neck.

Type 59 (Jrw. 1348) Perhaps an ellipsoid *jar* with a short angular neck. Fine-grained slate-brown ware. Dark-red slip. The neck-shoulder junction emphasised by a narrow, horizontal, band of short, slanting strokes between two thin bands. Neck blackened at some parts due to inverted firing.

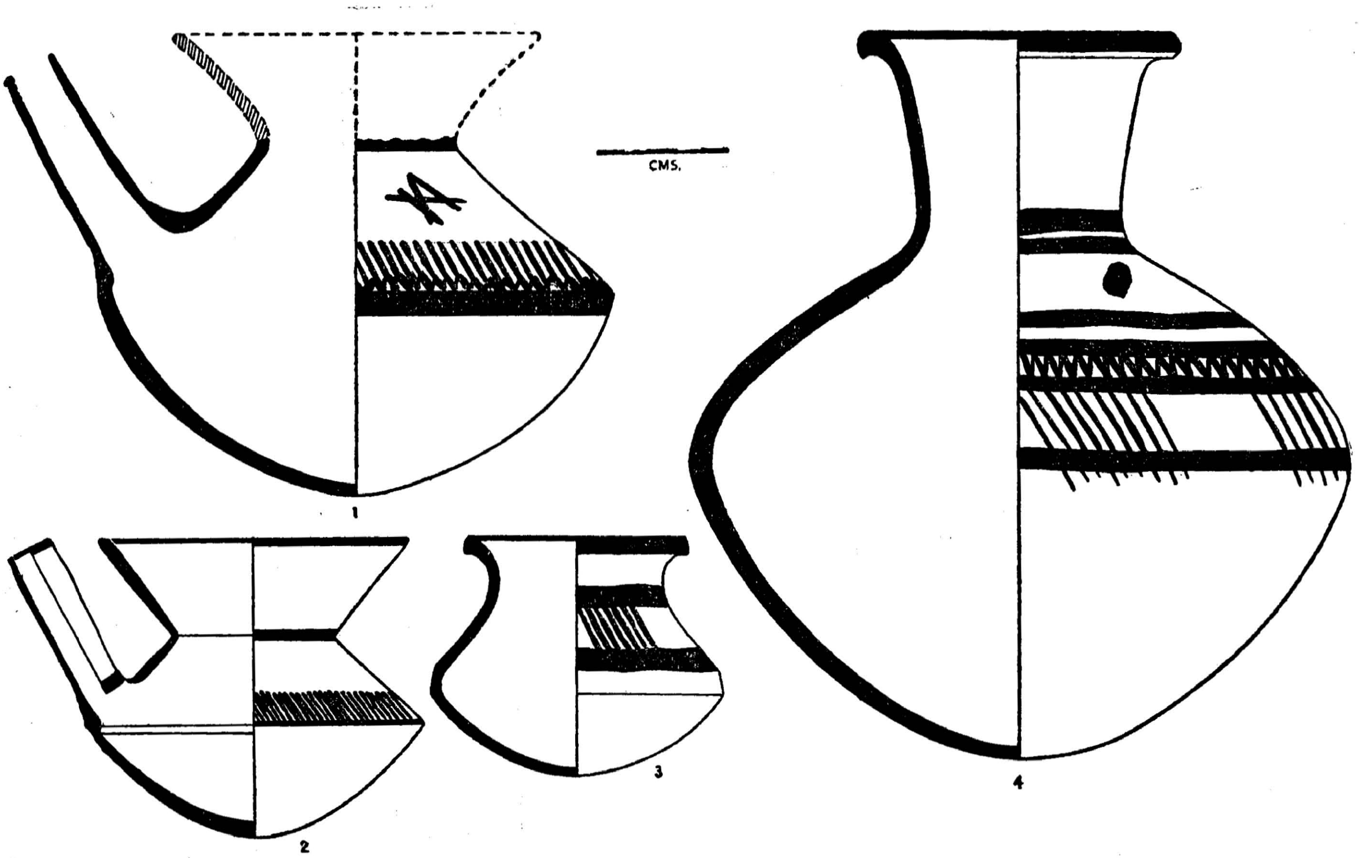

Fig. 61. Complete Painted Pottery vessels from Jorwe (Unstratified). 1-2 Spouted, 3-4 Short necked.

(*See p. 166*)

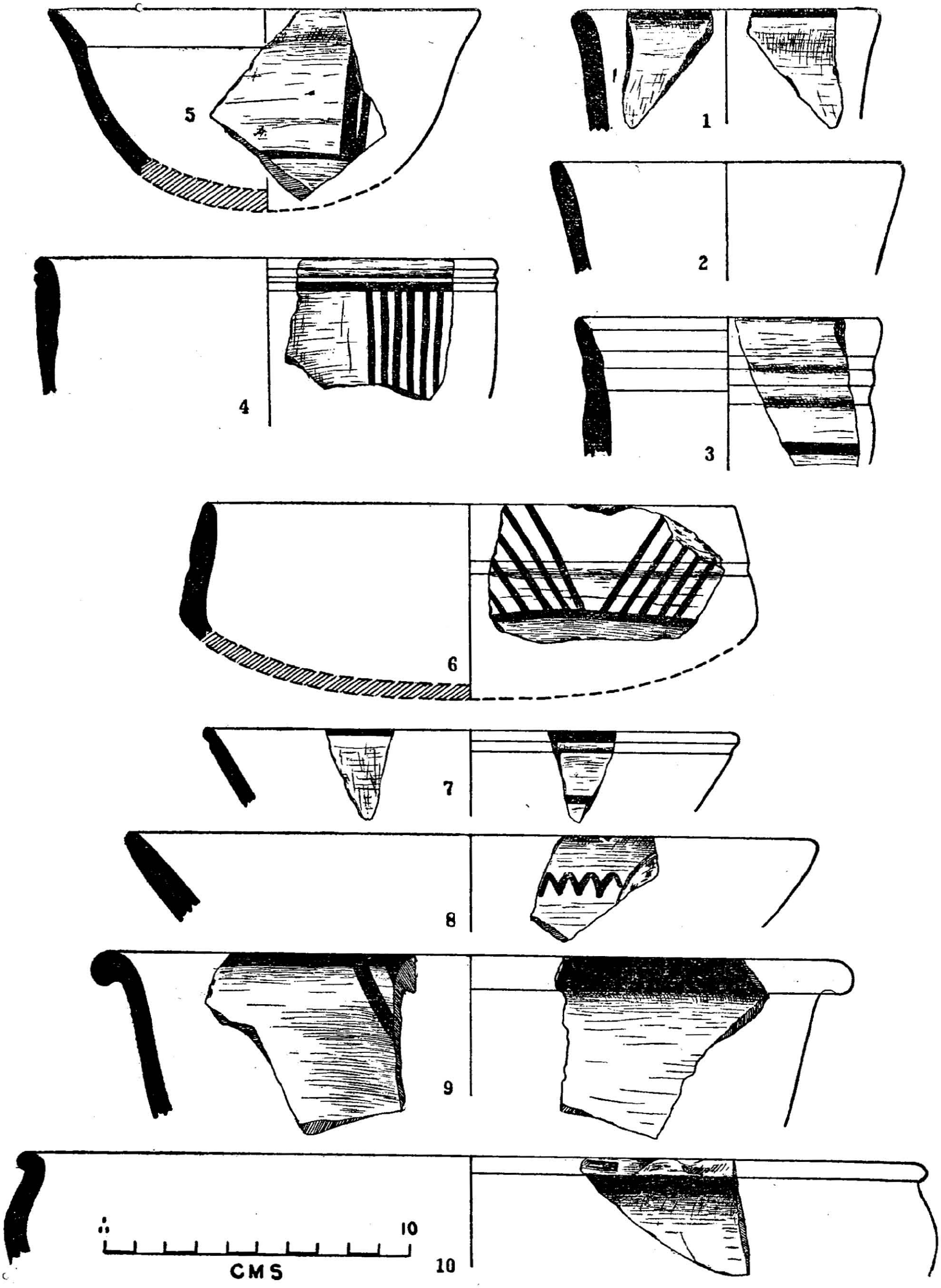

Fig. 62. Types 1-10.
(*See pp. 166-67*)

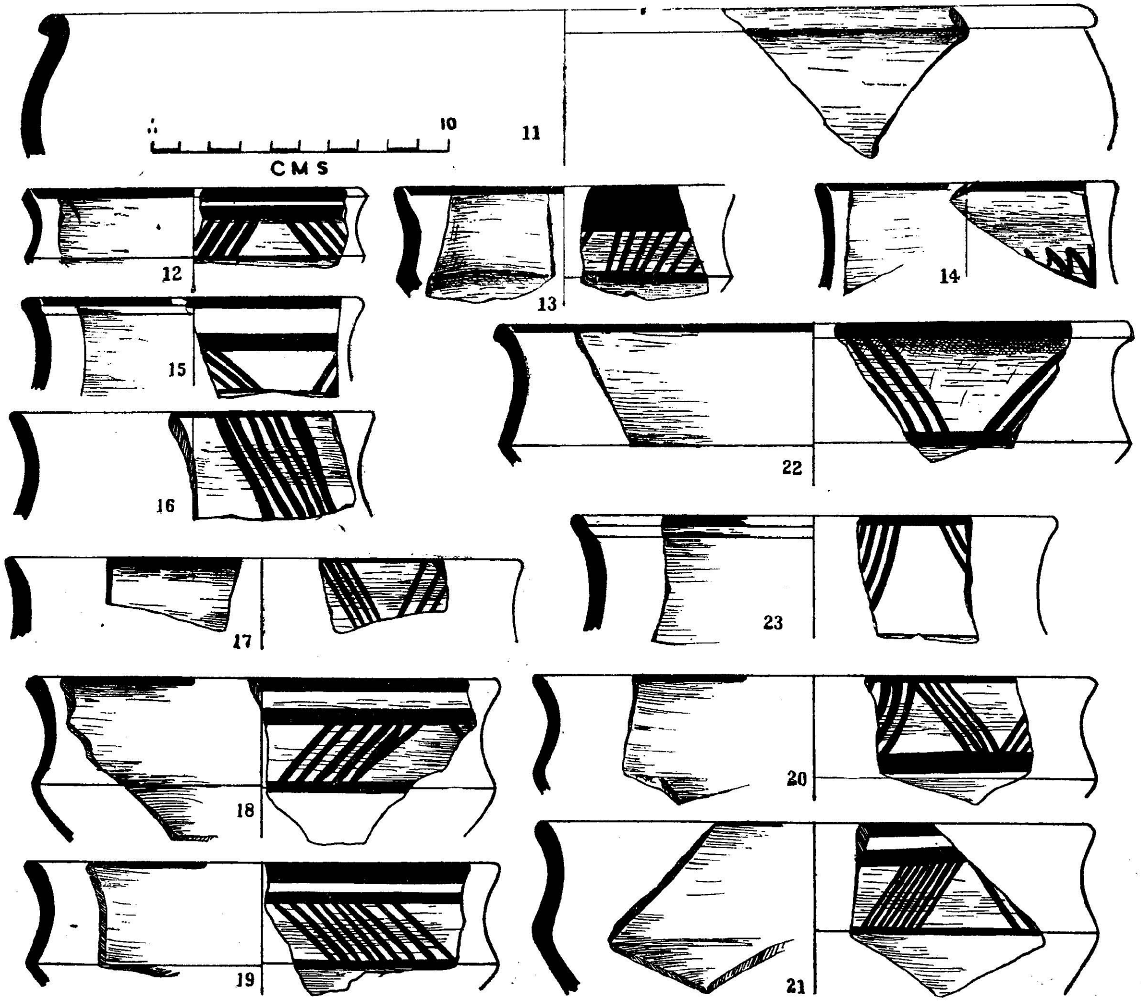

Fig. 63. Types 11-23.
(*See pp. 167-68*)

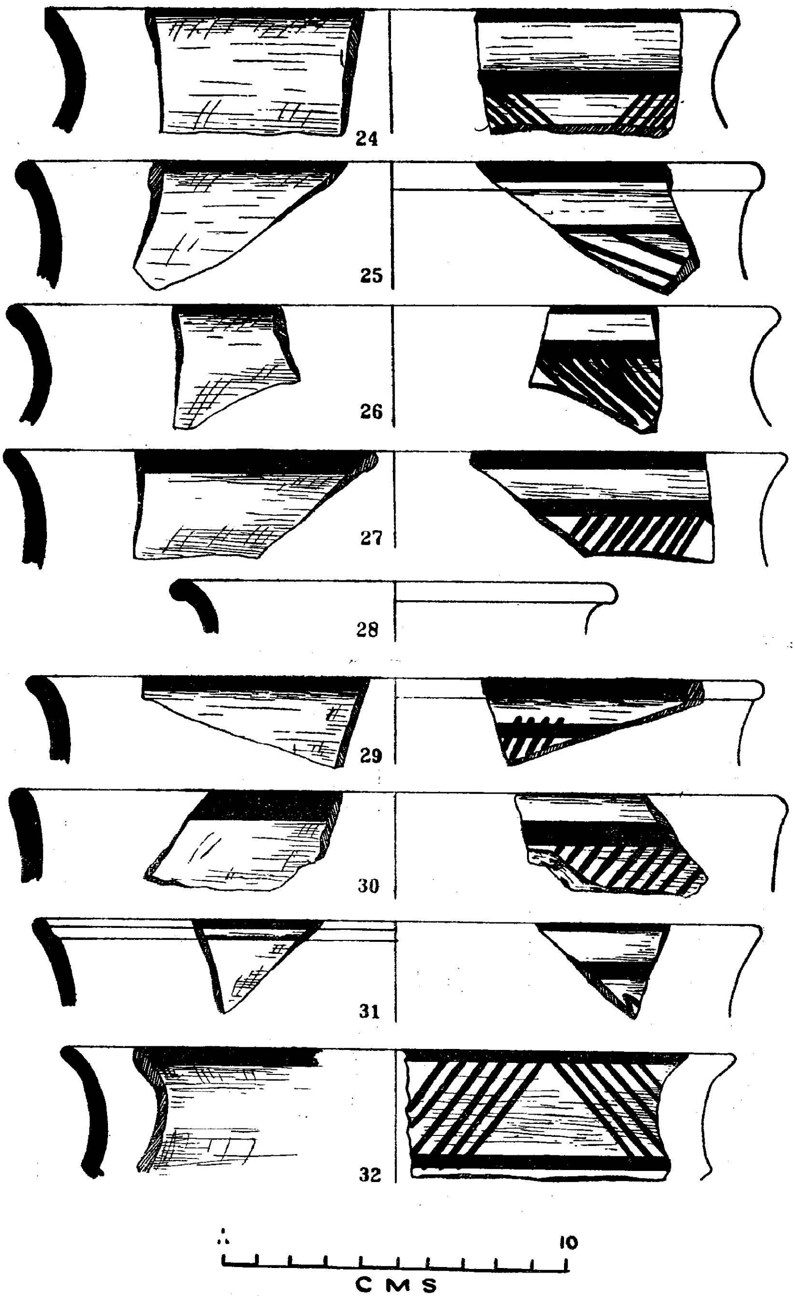

Fig. 64. Types 24-32.
(*See pp. 168-69*)

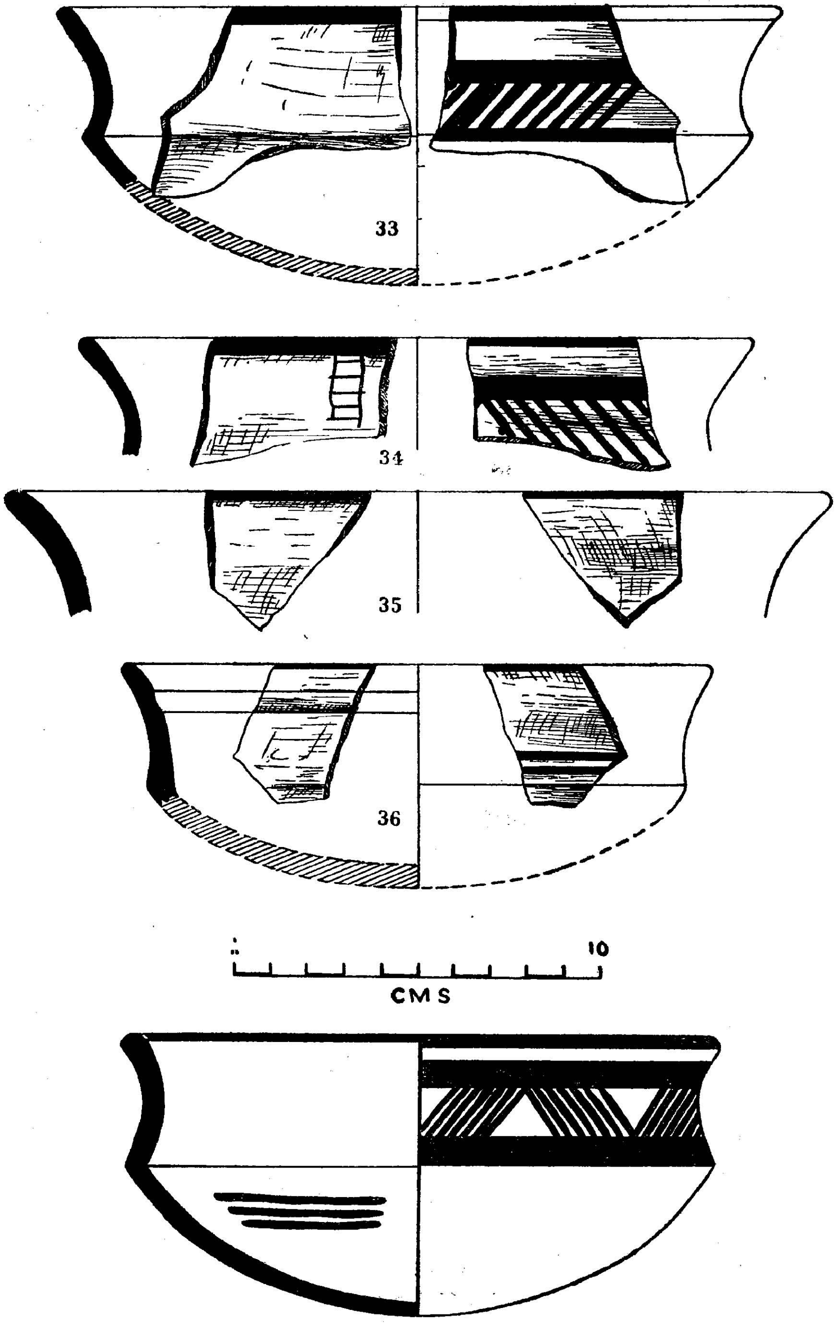

Fig. 65. Types 33-36 and a complete Carinated Bowl (36a)

(*See p. 169*)

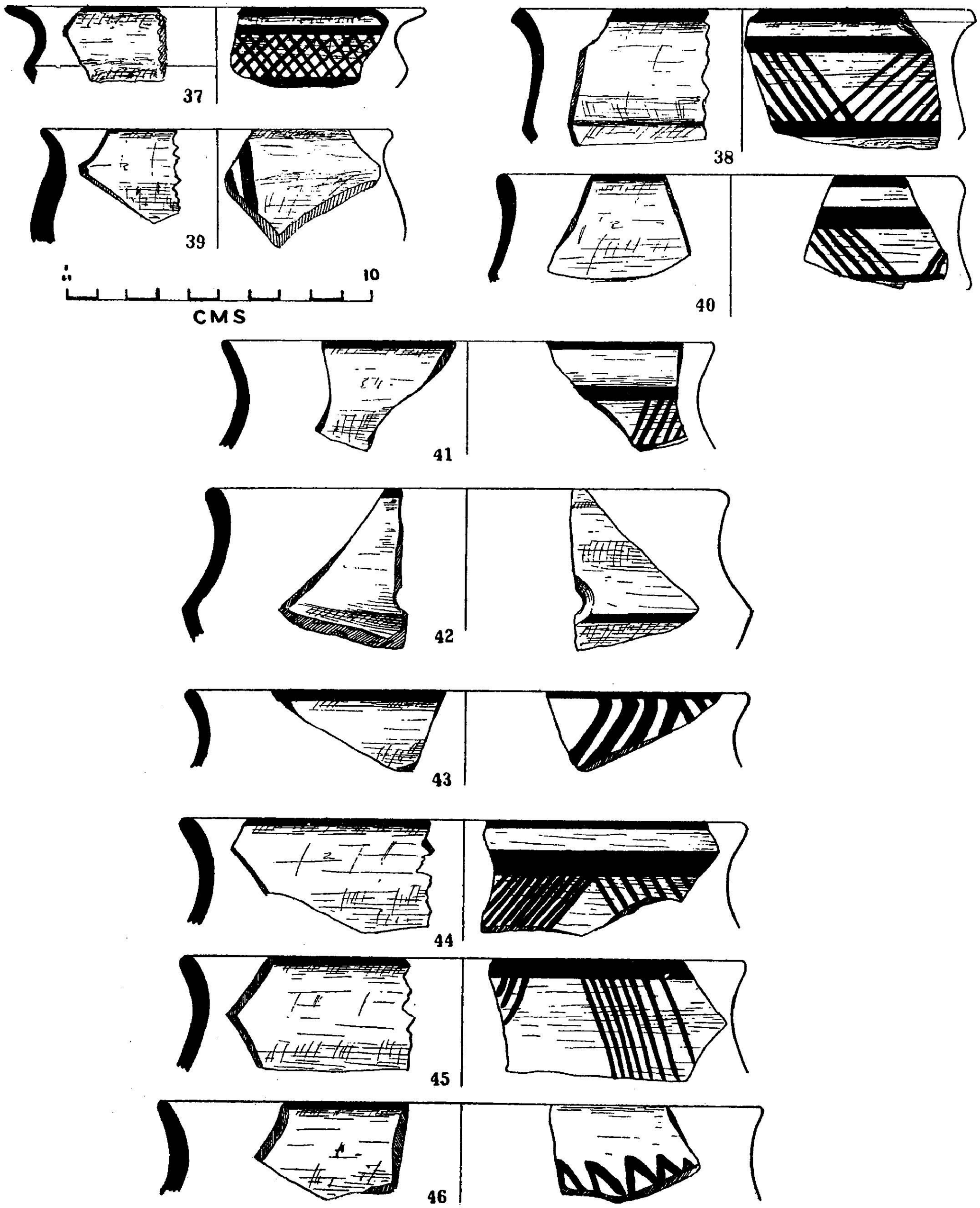

Fig. 66. Types 37-46.
(*See p. 169*)

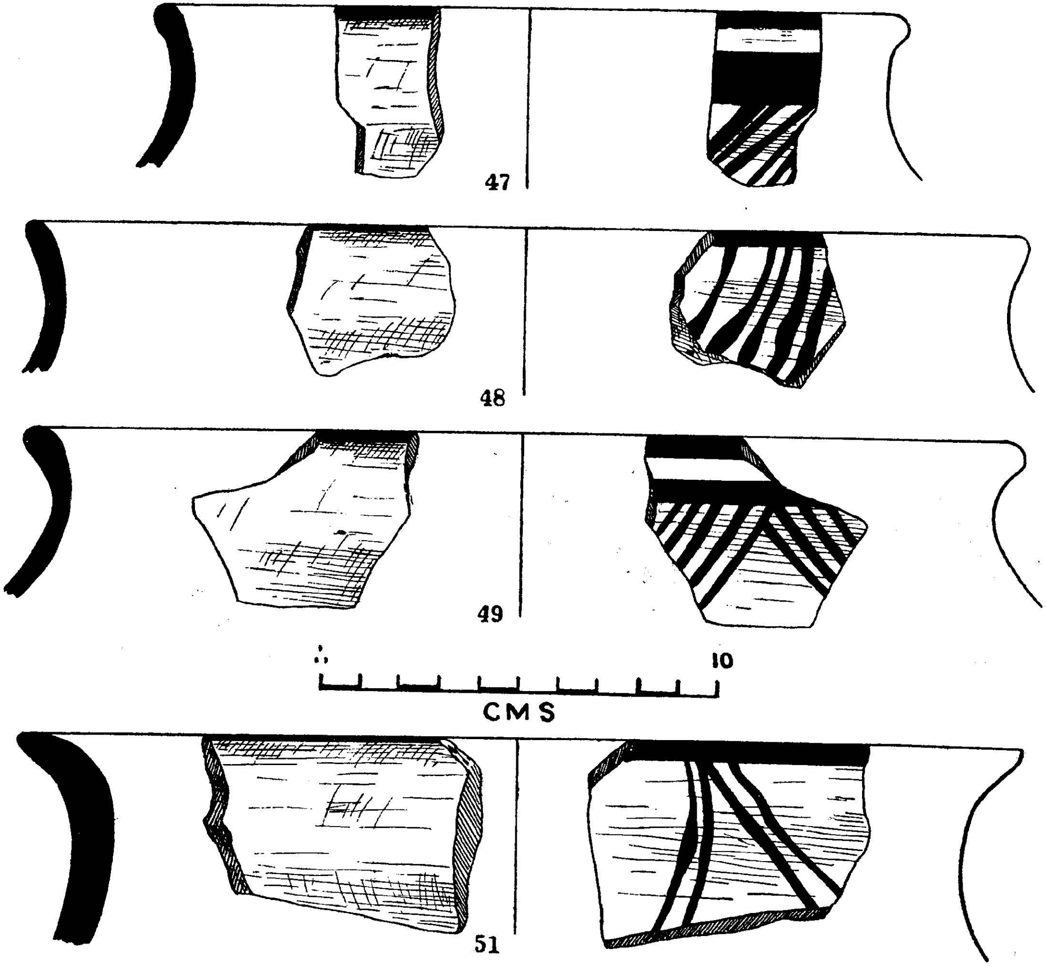

Fig. 67. Types 47, 49, 51.

(*See p. 170*)

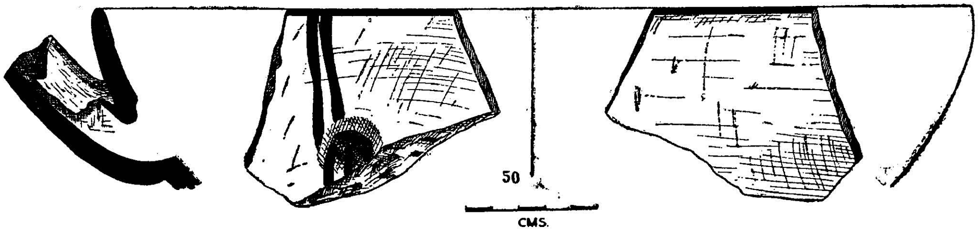

Fig. 68. Type 50.

(*See p. 170*)

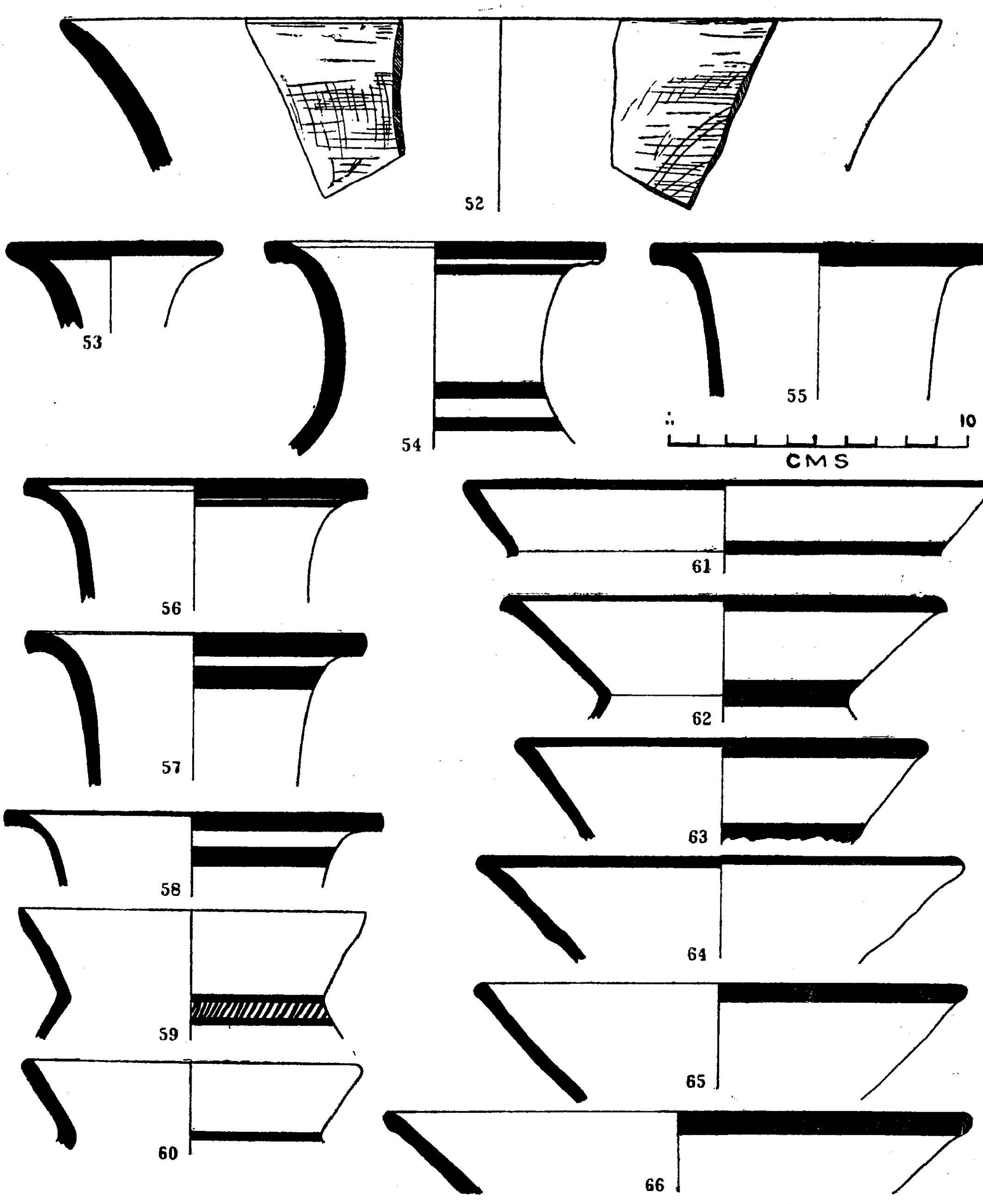

Fig. 69. Types 52-66. Simple and Unpainted

(*See pp. 170-71*)

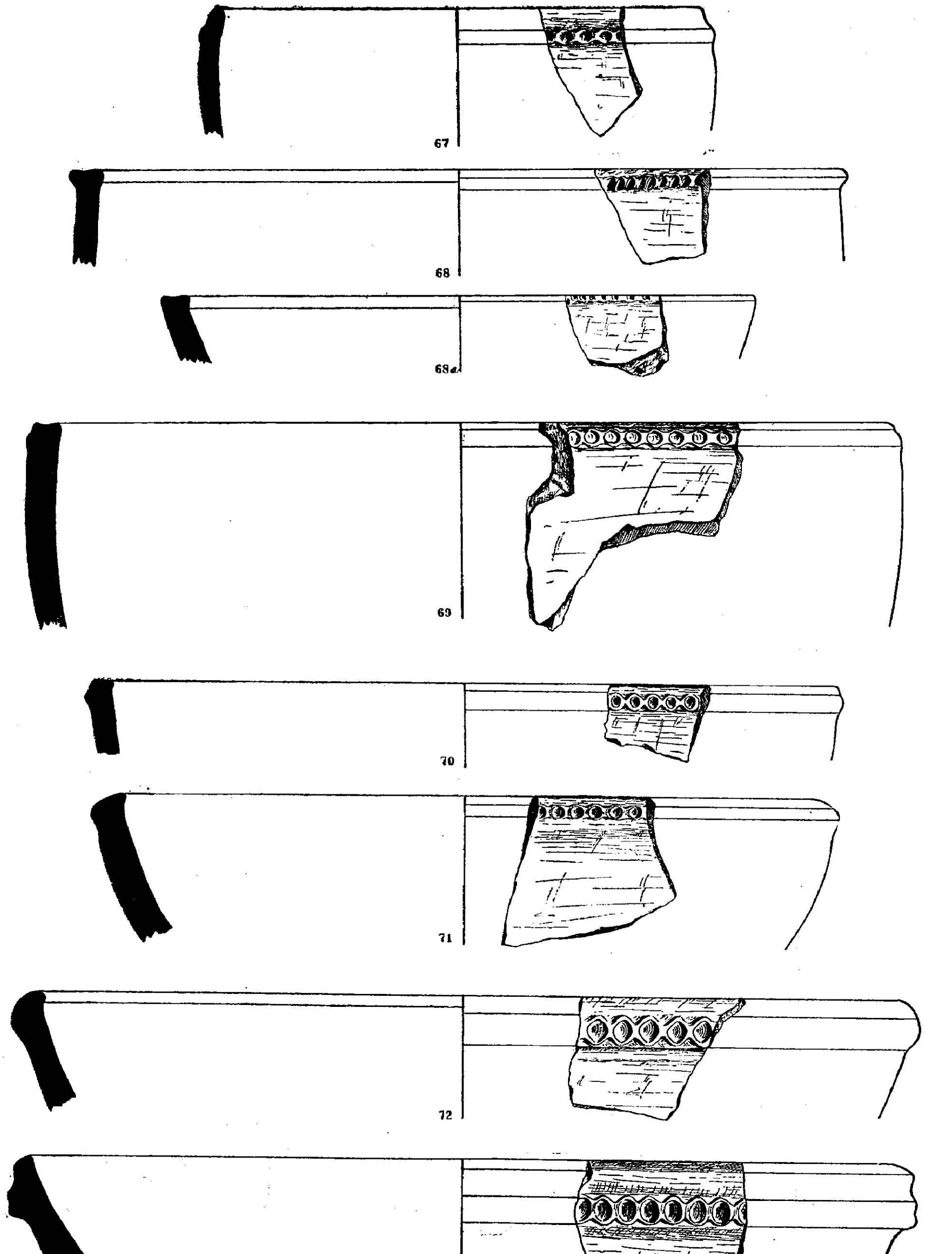

Fig. 70. Types 67-73. Decorated.

(*See p. 171*)

Types 60-66 represent probably the flaring straight-sided rims of vessels having an acute carination on the belly and rounded base, as indicated by a few intact but unstratified specimens. [See Fig. 61 and pl. XXXIV].

FIG. 70 (*Types 67-73*)

Type 67 (Jrw. 2275) is a *bowl* of convex profile with a slightly inturned and rounded rim. Medium-grained brick ware, light tan slip. An applied band of finger-tip ornament just below the rim on the exterior.

Type 68 (Jrw. 1/289) is a *bowl*, thick-walled, almost straight-sided, with ledge-like projection on the rim. Coarse-grained black ware of medium fabric, a fine thick tan slip and a thin greyish-black slip on the inside and outside respectively. The exterior burnished. The decoration, on outer rim-projection, of wedge-shaped projections fashioned by removing thin slices by vertical and slanting cuts.

Type 69 (Jrw. 1/281) is a deep *basin* thick of convex profile with a rim distinguished by horizontally flattened top and a slight internal flange. Coarse-grained black ware. Thick tan slip inside, light outside. Marks of burnishing on the inside. Applied thin band of finger-tip ornament at the rim.

Type 70 (Jrw. 3243) is a smaller variant of Type 69 (Jrw. 1/281). Medium-grained black ware of fine fabric and is perhaps treated with some kind of blackish slip on both surfaces. Perhaps the interior surface was burnished.

Type 71 (Jrw. 3223) *Basin*, thick walled, having perhaps a rounded base with a rim internally beaked and bevelled to the outside and rounded. Coarse-grained black ware, thick light tan slip. String-course of finger-tip impressions on the rim.

Type 72 (Jrw. 1/323). Similar to Type 71, but there is a ledge-like small projection at the rim.

Type 73 (Jrw. 777) Almost similar in type and decoration to Type 71.

FIG. 71 (*Types 74-81*)

Types 74 (Jrw. 3232) A variant of Types 72-73, except for a slight difference in shape of the rim.

Type 75 (Jrw. 3241) do do

Type 76 (Jrw. 3218) Similar to above, but with a slightly outturned, rounded and internally bevelled rim. Coarse-grained brick ware, with a thin-orange coloured slip on the exterior.

Types 77-77a (Jrw. 2573) Almost similar to Types 72-73, but for slight variations in rim and the decoration motif.

Type 78 (Jrw. 1385) *Basin*, with slightly slanting straight side. Rim with flattened top and two rounded projections, one on either side. Coarse-grained black ware of medium fabric. Thick pale tan slip. The interior perhaps burnished. The rim externally notched.

Type 79 (Jrw. 1459) *Basin*, with steeply slanting sides, having a corrugated exterior and rim bevelled to the outside and externally squared. Medium grained black ware. Pale tan slip. Fully burnished. Finger-tip impressions on the rim.

Type 80 (Jrw. 2571) Almost similar to Type 79.

Type 81 (Jrw. 2488) *Bowl*, or *basin*, with thin, slanting, but wavy sides, and a rim with similar outline. Fine-grained tan ware. Brown slip.

FIG. 72 (*Types 82-85*)

Type 82 (Jrw. 2474). *Storage jar* (rānja.) with a globular body and slightly inturned rim. The latter is thickened and flat-topped. Finger-tip impressions. Coarse-grained black ware. Tan slip. The exterior partially black owing to insufficient firing, but is burnished.

Type 83 (Jrw. 3225) *Storage jar* comparatively thin-walled with a short flaring neck, and a sharp-edged rim. Coarse-grained black and brown ware of medium fabric. Blackish tan slip. Band of fingertip impressions on the neck.

Type 84 (Jrw. 779) *Large jar* with a flaring neck, having a blunt-edged rim. Coarse-grained brick ware. Thick tan slip. Exterior is heavily burnished. At the base of the neck is a ridge which bears gouge marks.

Type 85 (Jrw. 780) is a larger variant of Type 84. Deep–somewhat semi-circular hollow impressions on the neck-band.

FIG. 73 (*Types 86-89*)

Type 86 (Jrw. 1951) Thick-walled jar of perhaps ellipsoidal body. Coarse-grained black ware. Very thick, light tan slip. Both surfaces perhaps burnished. Applied band of finger-tip ornament on the neck.

Type 87 (Jrw. 2724) is a larger variant of Type 86. A double row of finger-tip impressions on the neck.

Type 88 (Jrw. 3322) Large, thick-walled storage jar with ridged neck, bearing finger-tip impressions, and a thickened everted rim with rounded edge. Coarse-grained black ware. Thick tan slip.

Type 89 (Jrw. 3325) Larger variant of the above.

FIG. 74 (*Types 90-101*)

Type 90 (Jrw. 800) Small, thick-walled, flat-based shallow *bowl* (lamp ?). Coarse grained brick ware, unslipped. Handmade.

Type 91 (Jrw. 3340) Thin-walled, deep, flaring *bowl* with a flat ringed-base. Coarse grained brown ware, unslipped. Turned perhaps on a slow wheel.

Type 92 (Jrw. 345) Small, vertical-necked, rimless globular *jar,* medium-grained brownware. No slip inside, the exterior with a thin black slip. Probably handmade.

Type 93 (Jrw. 3227) Small egg-shaped *bowl* of unusally thick wall and incurved and rounded rim. Medium-grained tan ware. Unslipped. Handmade.

Type 94 (Jrw. 3351) Long (?) neck of a vessel with a ridged exterior and an out-turned and externally squared rim. Coarse-grained gritty brick-ware of medium fabric, red slip peeling off at places.

Type 95 (Jrw. 3355) Long (?) *neck* of a jar or vessel with a flanged, rounded and internally grooved rim. Coarse-grained tan ware of medium fabric. Brownish orange slip peeling off at places.

Type 96 (Jrw. 3354) A slightly larger variant of Type 95.

Type 97 (Jrw. 3361) Another variant of Type 95.

Type 98 (Jrw. 3367) Neck, flaring, with rounded edge, of fine-grained tan ware.

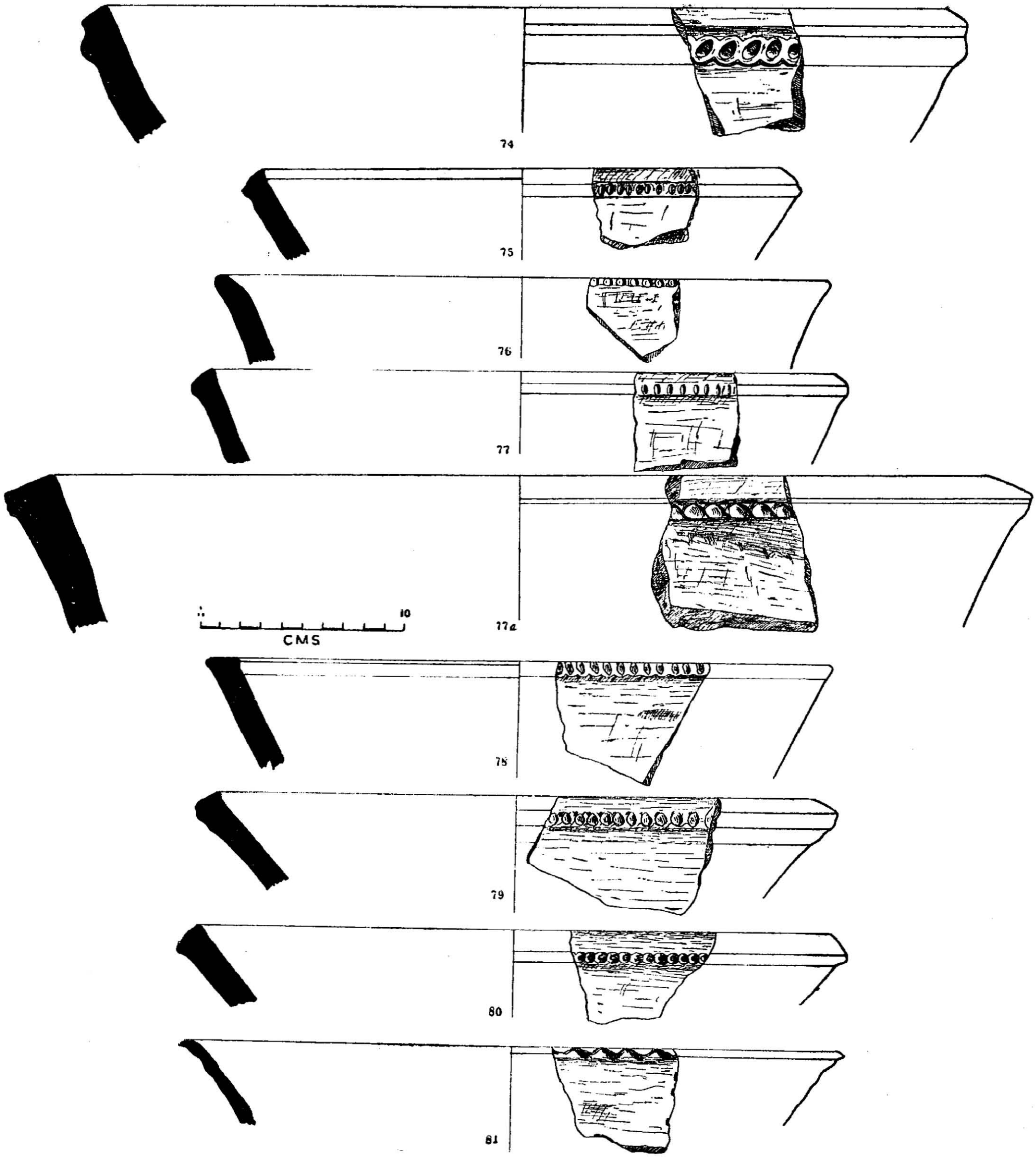

Fig. 71. Types 74-81. Decorated.

(*See p. 171*)

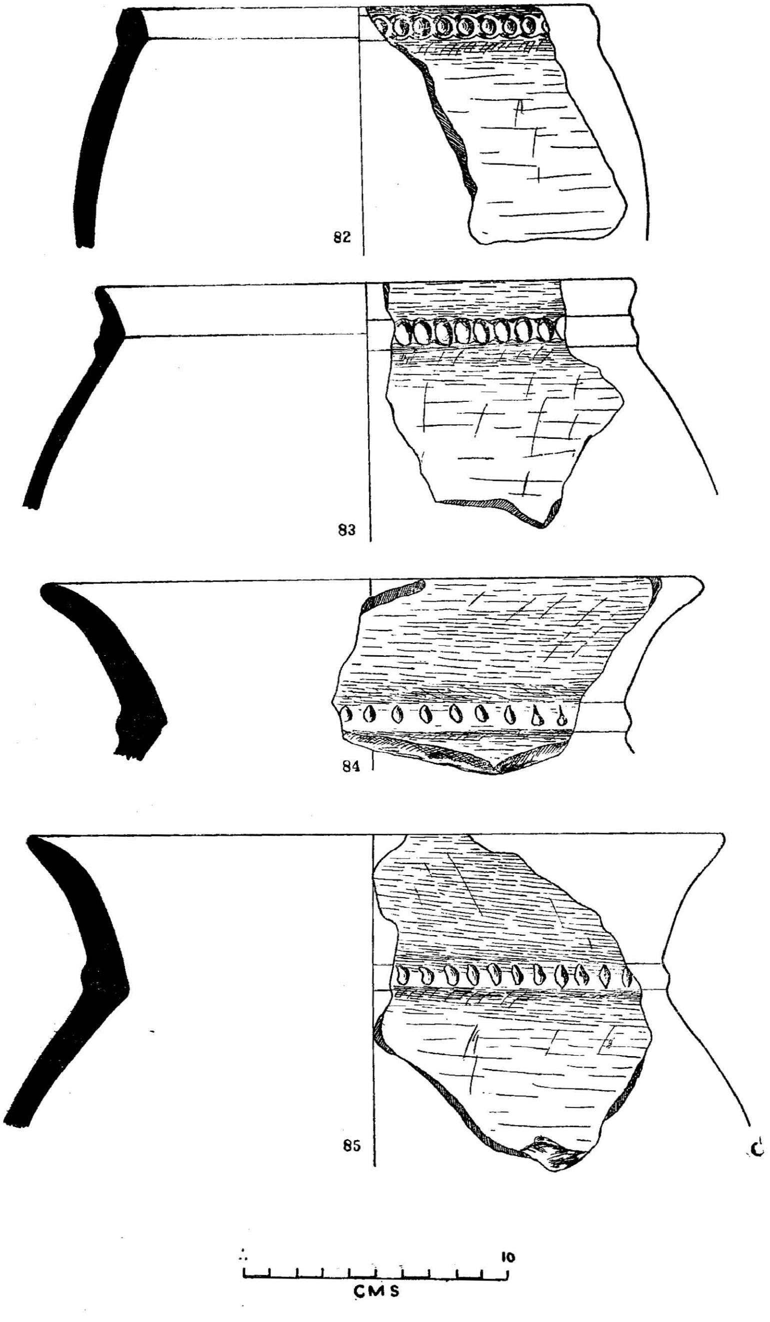

Fig. 72. Types 82-85. Decorated.

(*See p. 172*)

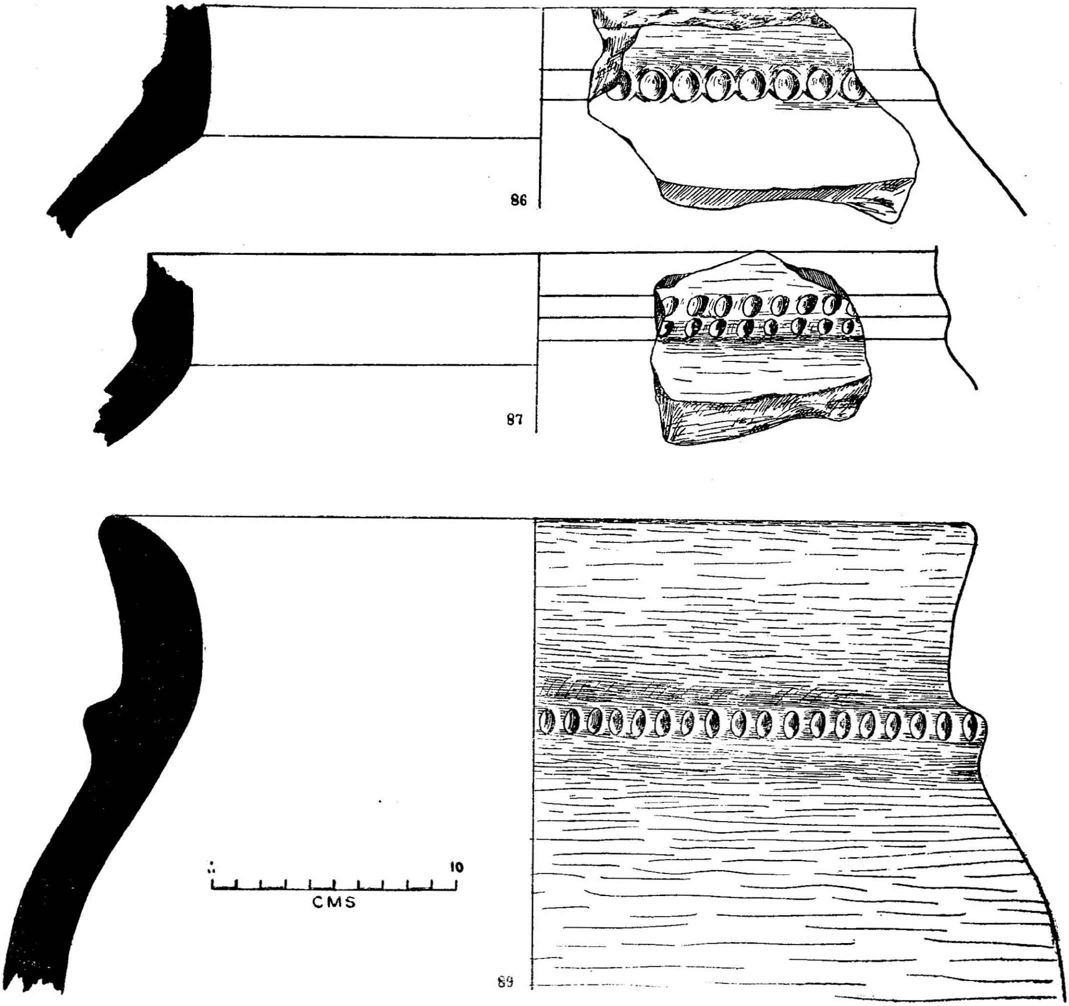

Fig. 73. Types 86-89. Decorated.

(*See p. 172*)

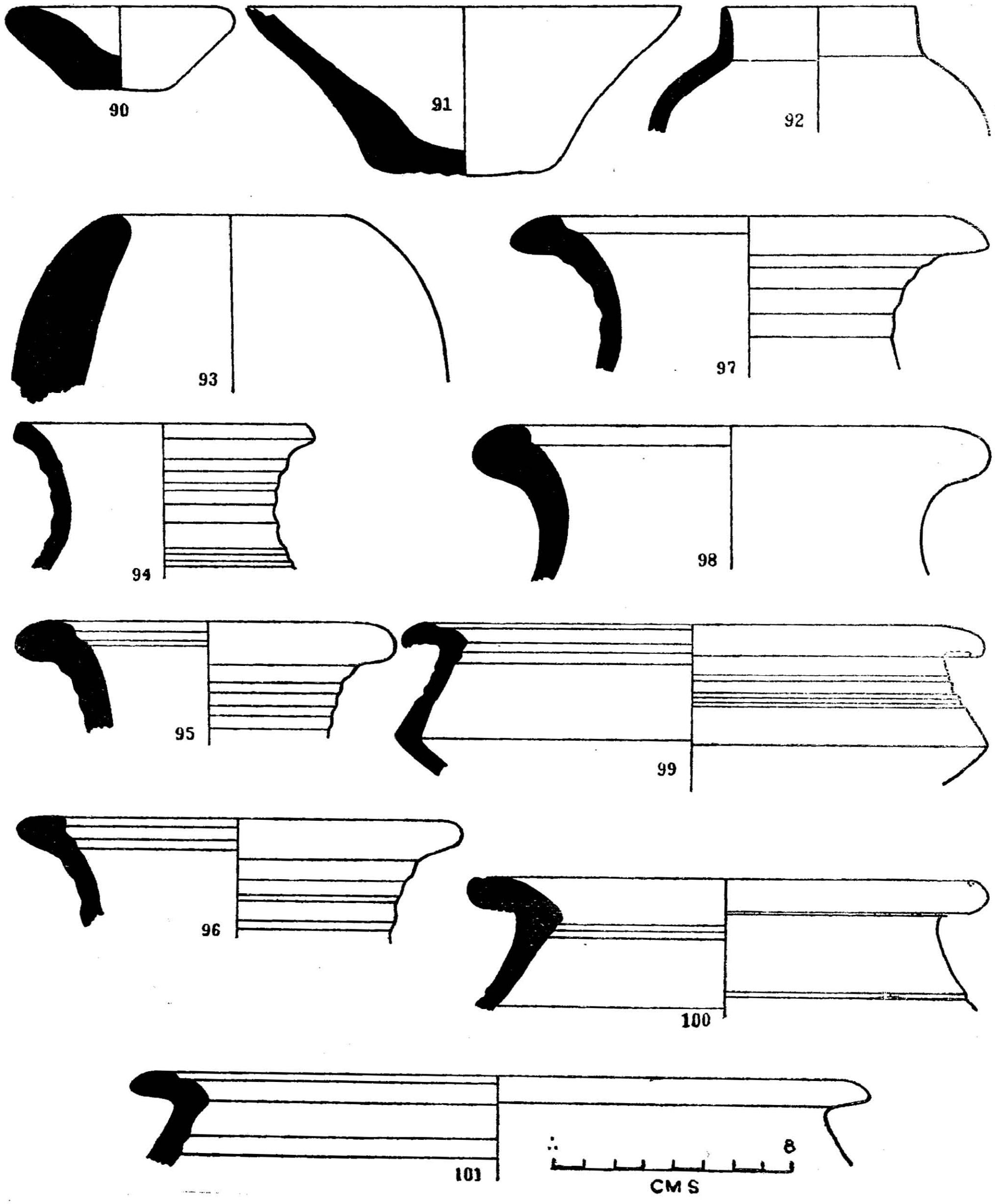

Fig. 74. Types 90-101. Simple.

(*See p. 172*)

Type 99 (Jrw. 3352) Carinated vessel of black-and-red ware with a grooved exterior and a flanged and beaked rim. Red burnished slip on the outside.

Type 100 (Jrw. 3363) Perhaps a *cooking vessel,* with a flanged and rounded rim having grooves on the upper and under-surfaces. Medium-grained brown ware of medium fabric. Red burnished slip.

Type 101 (Jrw. 3364) is a larger variant of Type 100.

FIG. 75 (*Types 102-110*)

Type 102 (Jrw. 3353) is a variant of Type 100 described above. Of the same ware and fabric, and treated with red burnished slip.

Type 103 (Jrw. 3357) Vessel with a flanged and rounded rim and an externally grooved neck. Coarse-grained tan ware with an admixture of husky temper. Red burnished slip.

Type 104 (Jrw. 3359) Wide mouthed vessel with slightly inturned sides, and externally beaked rim. Medium-grained brown ware. Thick red slip. Exterior burnished.

Type 105 (Jrw. 3365) A smaller variant of Type 104, without the grooves.

Type 106 (Jrw. 3358) A larger variant of Type 104, but without grooves.

Type 107 (Jrw. 3360) Large, thick-walled jar with a heavy roll-rim. Medium grained tan burning grey ware. Red slip. Exterior burnished.

Type 108 (Jrw. 3366) is a hollow lid, with a short oblique rounded rim, unslipped, coarse-grained tan ware.

Type 109 (Jrw. 3348) Lower part of a vessel with rounded base, and a projection at the top to receive the lid. Red slip outside.

Type 110 (Jrw. 3366 a) Stand with inturned sides having an externally beaded rim. Coarse-grained grey ware. Thick tan slip. Exterior burnished and is black-and-red due to inverted firing.

FIG. 76 (*Types 111-117*)

Type 111 (Jrw. 2879) Rimless, bowl (?) with straight, tapering sides. Medium grained black ware, a well levigated whitish black slip. Fully burnished.

Type 112 (Jrw.1901) Shallow pan with perhaps a thickened and pronounced convex bottom and a slightly everted and tapered rim. Cf. Type 6 (Jrw. 1/165). Coarse-grained black ware, well levigated tan burning black slip. Exterior burnished.

Type 113 (Jrw. 2462) Larger variant of Type 113.

Type 114 (Jrw. 1315) Another larger variant of Type 112.

Type 115 (Jrw. 1/319) Vessel with a flaring neck. Medium-grained black ware, well levigated pale tan slip. Fully burnished.

Type 116 (Jrw. 803) Shallow dish with perhaps rounded base and an everted, rounded rim. Coarse-grained black ware. Fine, thick, burnished tan slip inside and black slip outside.

Type 117 (Jrw. 3110) Rimless *dish* or bowl with flaring sides blackish grey ware, thick, well levigated tan slip. Fully burnished.

FIG. 76A AND PL. XXXV 1-2(*Types 118, 118a*)

Type 118 (Jrw) A vessel with rounded bottom and sides with wide-angled neck and flaring rim. Grey ware with smooth surfaces. Probably a burial urn, and comparable in type and fabric to the Brahmagiri burial urn T. 37 which is reproduced here. (See also Type 115 and Types 118 b—124).

Type 118a A much smaller vessel than the previous one but cruder, probably handmade as indicated by the irregular outline—inner and outer. Probably a burial urn and comparable to Br, T. 39 which is also reproduced here.

FIG. 77 (*Types 118b-127*)

Type 118b (Jrw. 776) Flaring rim of probably a vessel like the urn with thick tan burning black slip. Fully burnished.

Type 119. (Jrw. 782) is a dish of concave profile, well levigated tan slip inside and thick black slip outside. Both the surfaces are burnished.

Type 120 (Jrw. 1/284) Basin (?) with flaring sides and rim thinned at the edge. Coarse-grained blackish grey ware. Thick black burnished slip.

Type 121 (Jrw. 3217) Small basin with rim thickened at the edge.

Type 122 (Jrw. 1921) Similar to Type 121 but of fine-grained tan ware. Fine, well levigated thick tan slip. Smooth and fully burnished.

Type 123 (Jrw. 3227) A variant of Type 122.

Type 124 (Jrw. 1/294) Another variant of Type 122.

Type 125 (Jrw. 2467) A variant of Type 122.

Type 126 (Jrw. 2481) Shallow, rimless basin, rounded at the edge. Coarse-grained black ware. Thick tan slip. Fully burnished.

Type 127 (Jrw. 1/149) A variant of Type 126.

FIG. 78 (*Spouts and Lid-handles*)

1. (Jrw. 1/360) Short cylindrical spout of medium grained slate-grey ware, overfired, red-brown slip on the outside only. Disfigured due to overfiring, decorated with a broad black band along the upper edge from top to bottom. Traces of a thin black line along the periphery of the bottom.

2. (Jrw. 1430) Fragment of a funnel-spout of fine-grained, light tan ware, tan slip on the outside only. Deep circumscribed line—perhaps a string impression—and a broad black band along the upper edge.

3. (Jrw. 1063) Straight funnel-spout of fine-grained tan ware, a thin red brown slip on the exterior only, a black band round the mouth.

4. (Jrw. 1892). Straight funnel-spout of fine-grained light tan ware, orange red slip on the exterior only, two black bands—one around the mouth and the other round the base.

5. (Jrw. 1/157) Straight funnel spout with rather concave outline, fine-grained tan ware, hardbaked and red brown slip on the exterior. Simple black band along the upper edge.

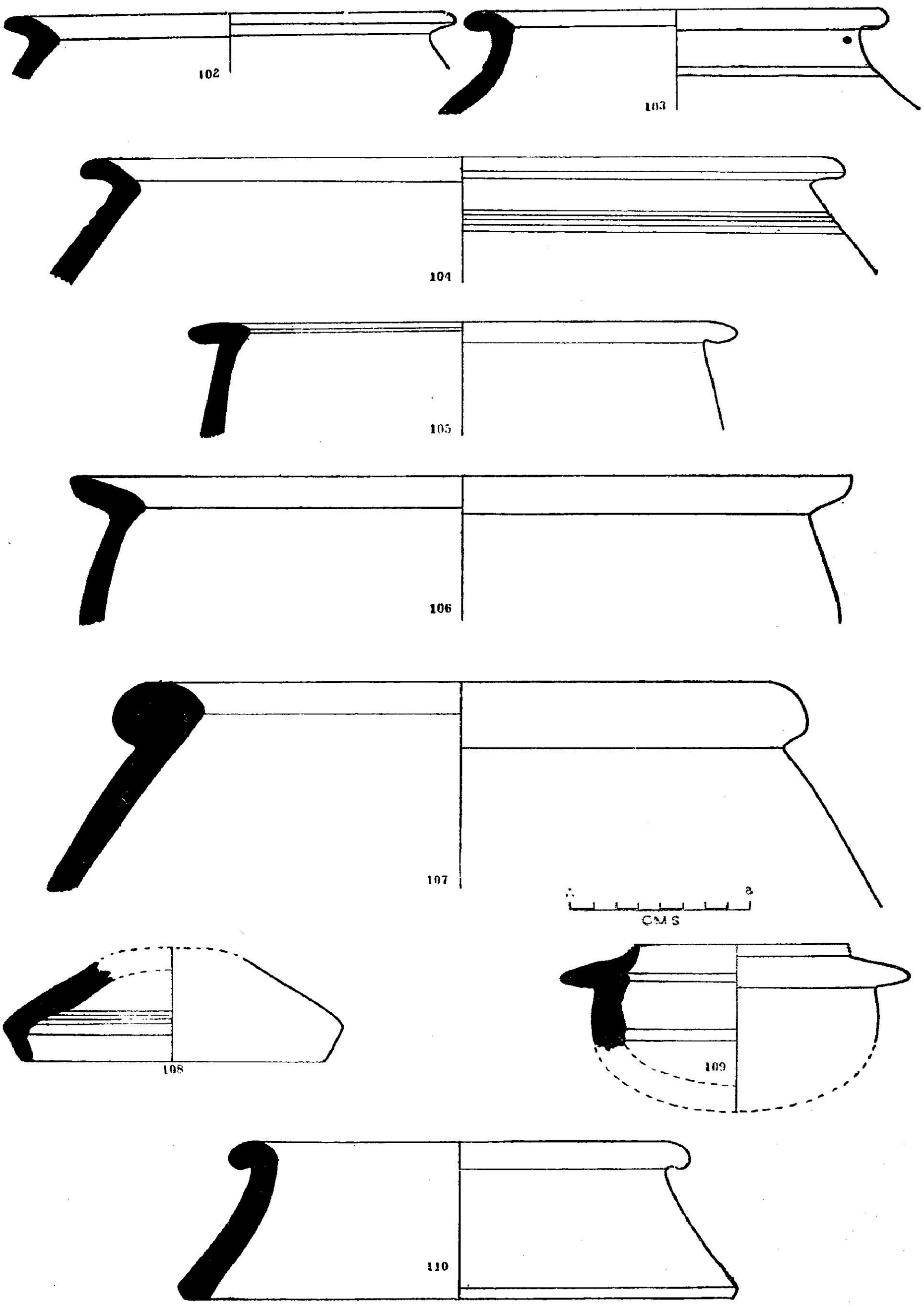

Fig. 75. Types 102-110. Simple (Ringed stand).

(*See p. 173*)

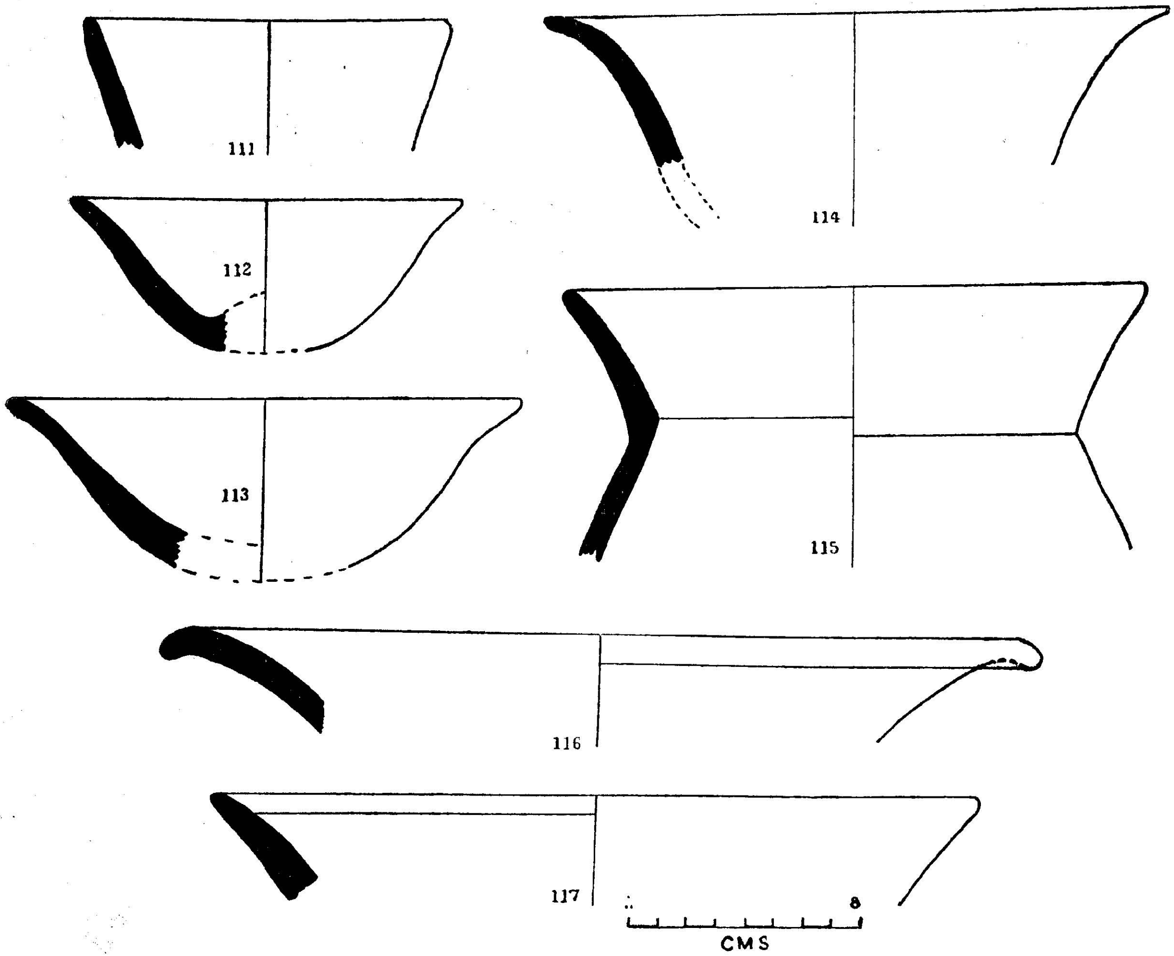

Fig. 76. Types 111-117 Shallow Bowls and Urns (?).

(*See p. 173*)

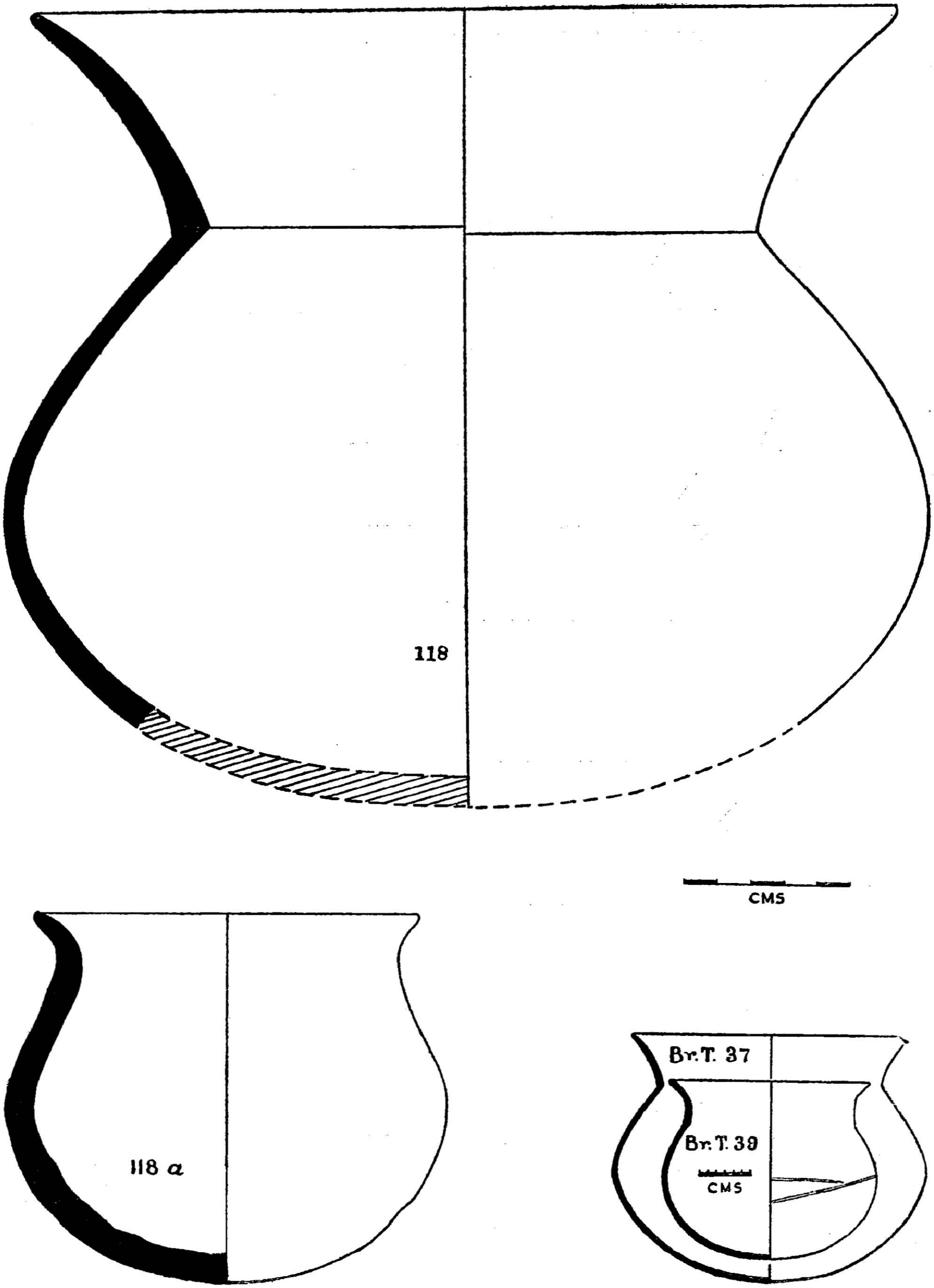

Fig. 76a. Grey ware. Types 118-118a. Urns (?).

(*See p. 174*)

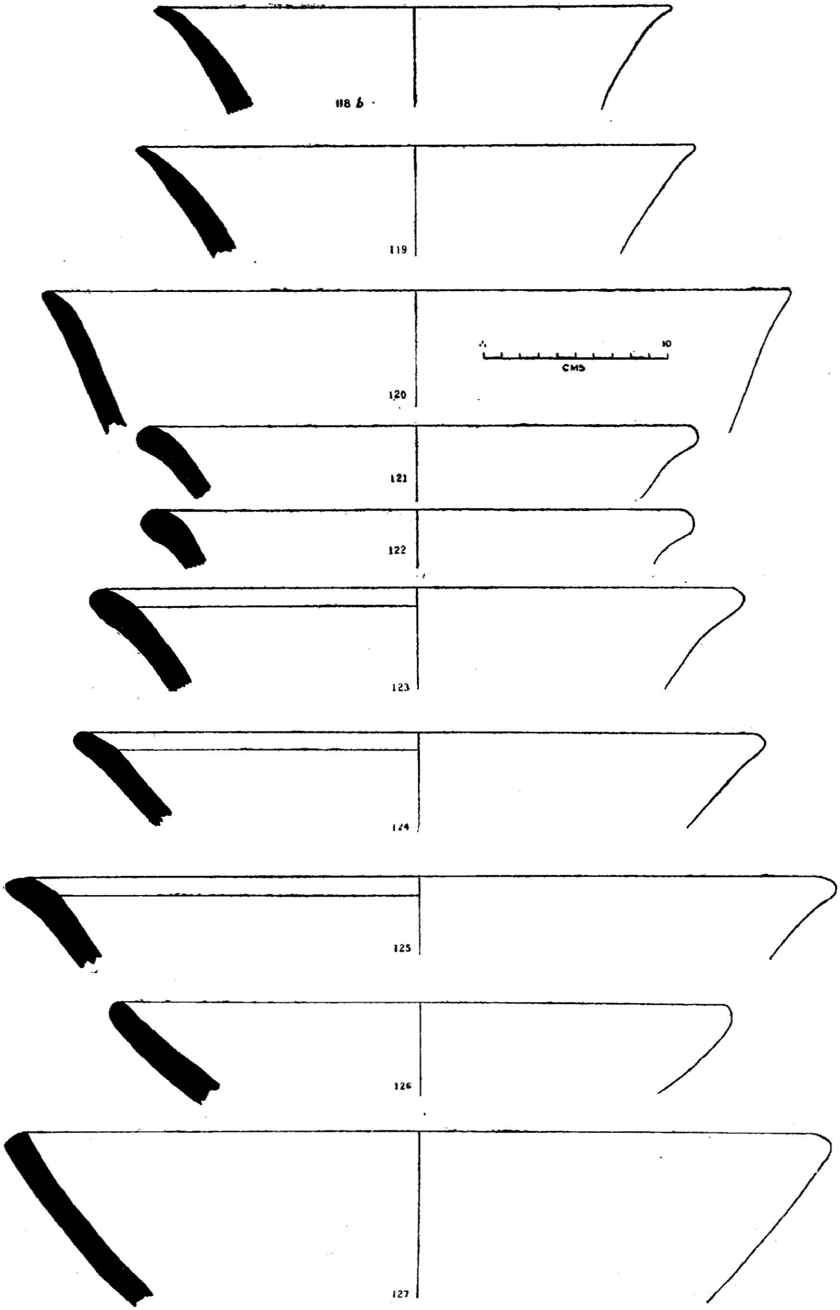

Fig. 77. Types 118b, 119-127.

(*See p. 174*)

6. (Jrw. 2638) Short funnel or tubular spout of fine-grained brick ware, a brick red slip on the exterior, broad black band along the upper edge.

7. (Jrw. 525) Broken funnel-spout of fine-grained tan ware, red slip on the exterior, a broad black band along the upper edge.

8. (Jrw. 1431) Broken funnel-spout of medium grained brick ware, red brown slip on the exterior, a broad band in black along the upper edge.

9. (Jrw. 1064) Broken funnel-spout, fine fabric, hardbaked, dark red slip on the exterior only, black band along the periphery of the base.

10. (Jrw. 611) Thick solid knob-handle of probably a saucer-shaped lid with a sagger base. It is of coarse-grained light tan ware, hardbaked, a fine grained slip of the same clay. In the middle of the upper surface it bears two finger-tip impressions.

11. (Jrw. 1/251) Thick solid knob-handle of a saucer-shaped lid with a sagger base. It is of coarse-grained black ware of rough fabric, indifferently fired, and covered with a tan slip.

12. (Jrw. 2743) Thick solid knob-handle of a lid of fine-grained slate ware, fine fabric, hardbaked and covered with a fine black slip and burnished.

FIG. 79 (*Horizontal bands of the zig-zag pattern*).

1. (Jrw. 971) Shoulder-piece, with designs in black, and probably a potter's mark on dark-red background. Coarse-grained, blackish-grey ware, hard-baked, thick tan slip on both surfaces with a wash of dark-red on the outer. Handmade.

2. (Jrw. 1707) Shoulder-piece, globular pot, wavy design on pink-red. Fine-grained tan ware, hard-baked.[1]

3. (Jrw. 1/13) Shoulder-piece, globular vessel, the design on red.

4. (Jrw. 1058) Neck-shoulder fragment, globular vessel, the design on dark-red.

5. (Jrw. 931) Shoulder-piece, globular vessel, design on pink red.

6. (Jrw. 1/291) Shoulder-piece, globular vessel, design on bright red. Handmade.

7. (Jrw. 1078) Shoulder-piece, globular vessel, the design on yellowish red.

8. (Jrw. 2577) Shoulder-piece, globular pot, the design on brown red.

9. (Jrw. 1162) Sherd, probably shoulder piece, globular pot, the design on dark pink.

10. (Jrw. 970) Shoulder-piece, globular pot, design on pink.

11. (Jrw. 193) Shoulder-piece, globular pot, the design on pinkish tan background. Fine-grained, light-grey ware and thick tan slip on the inner and outer surfaces respectively with a pinkish wash on the outer.

12. (Jrw. 2477) Fragment, large globular vessel, the design on brown red.

FIG. 80 (*Oblique Brush Strokes and Cross-hatched and Blank Lozenges, Squares and Rhomboids*).

1. (Jrw. 1133) Sherd, the design on dark-red.

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1. These sherds are usually of fine-grained, well-baked wares having grey, tan or brown burnt surfaces with the kinds of slips mentioned above. Hence these details are omitted from the present description except where necessary.

2. (Jrw. 1086) Shoulder-piece, globular vessel, bearing the design on deep red background.

3. (Jrw. 877) Shoulder-piece of a globular vessel, bearing the design on dark tan background.

4. (Jrw. 1108) Sherd bearing the design on pink background, tan ware, pink slip. Wheel-turned.

5. (Jrw. 922) Sherd, design on cream background. Coarse grained blackish grey ware, rough fabric, hard-baked, thick light tan slip on both surfaces with a cream wash on the outer. Probably handmade.

6. (Jrw. 2/3117) Sherd, design on brown red.

7. (Jrw. 1154) Sherd, design on pink red.

8. (Jrw. 1/26) Fragment of a spouted, globular vessel, the design on dark red.

9. (Jrw. 1/159) Sherd, design on dark red.

10. (Jrw. 1399) Shoulder-piece, globular vessel, the design on deep red.

11. (Jrw. 1061) Fragment, globular vessel, the design on dark or brown red.

12. (Jrw. 1317) Fragment, globular vessel, the design on dark red.

FIG. 81 (*Wavy-line Pattern*).

1. (Jrw. 4/1663) Fragment, globular vessel, the design on dark chocolate.

2. (Jrw. 2/3190) Shoulder-piece, design on dark red.

3. (Jrw. 1/4) Shoulder-piece, globular pot, the design on dark red.

4. (Jrw. 1067) Shoulder-piece, globular vessel, the design on dark red ware.

5. (Jrw. 1/91) Shoulder-piece, globular vessel, the design on dark red.

6. (Jrw. 2/3170) Shoulder-piece, globular vessel, design on dark red.

7. (Jrw. 1/55) Shoulder-piece, globular vessel, the design on brown red.

8. (Jrw. 3172) Neck-shoulder fragment, the design on yellowish red.

9. (Jrw. 1/23) Sherd, design on orange-pink.

10. (Jrw. 1/86) Shoulder-piece, globular pot, the design on dark red.

11. (Jrw. 1/37) Neck-shoulder fragment, globular vessel, the design on red background.

12. (Jrw. 1075) Shoulder fragment, globular vessel, the design on red slip.

FIG. 82 (*Solid Squares, Grass-pattern and miscellaneous designs*).

1. (Jrw. 1/255 and 1/182) Shoulder-piece, globular pot, the design on dark tan.

2. (Jrw. 1/85) Probably shoulder-piece, fabric etc. identical with the above.

3. (Jrw. 3226) Neck-shoulder fragment of a carinated vessel, the design on dark red.

4. (Jrw. 834) Shoulder-piece of a carinated vessel, the design on dark red.

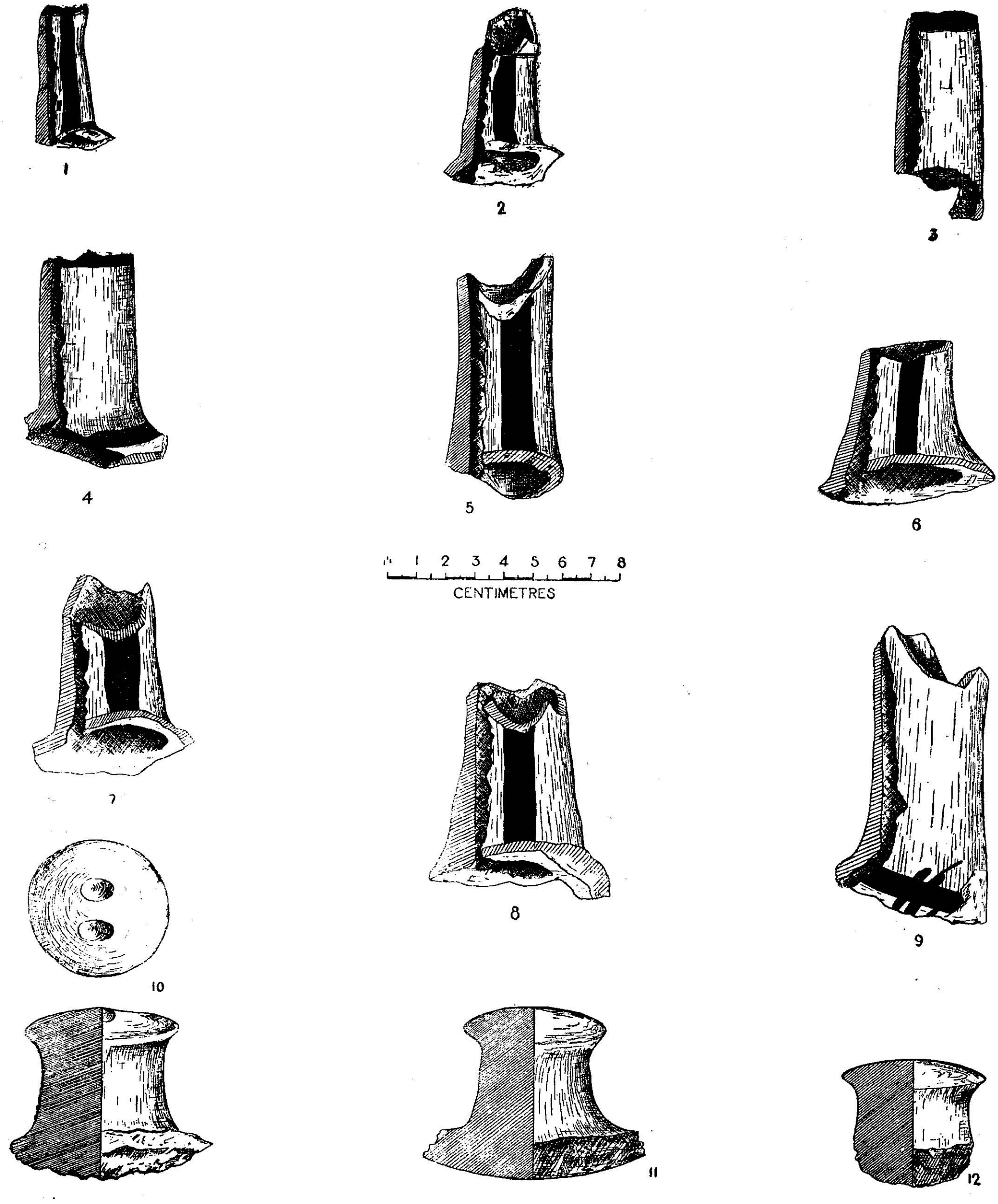

Fig. 78. Painted Spouts and knobs of Lids

(*See pp. 174-75*)

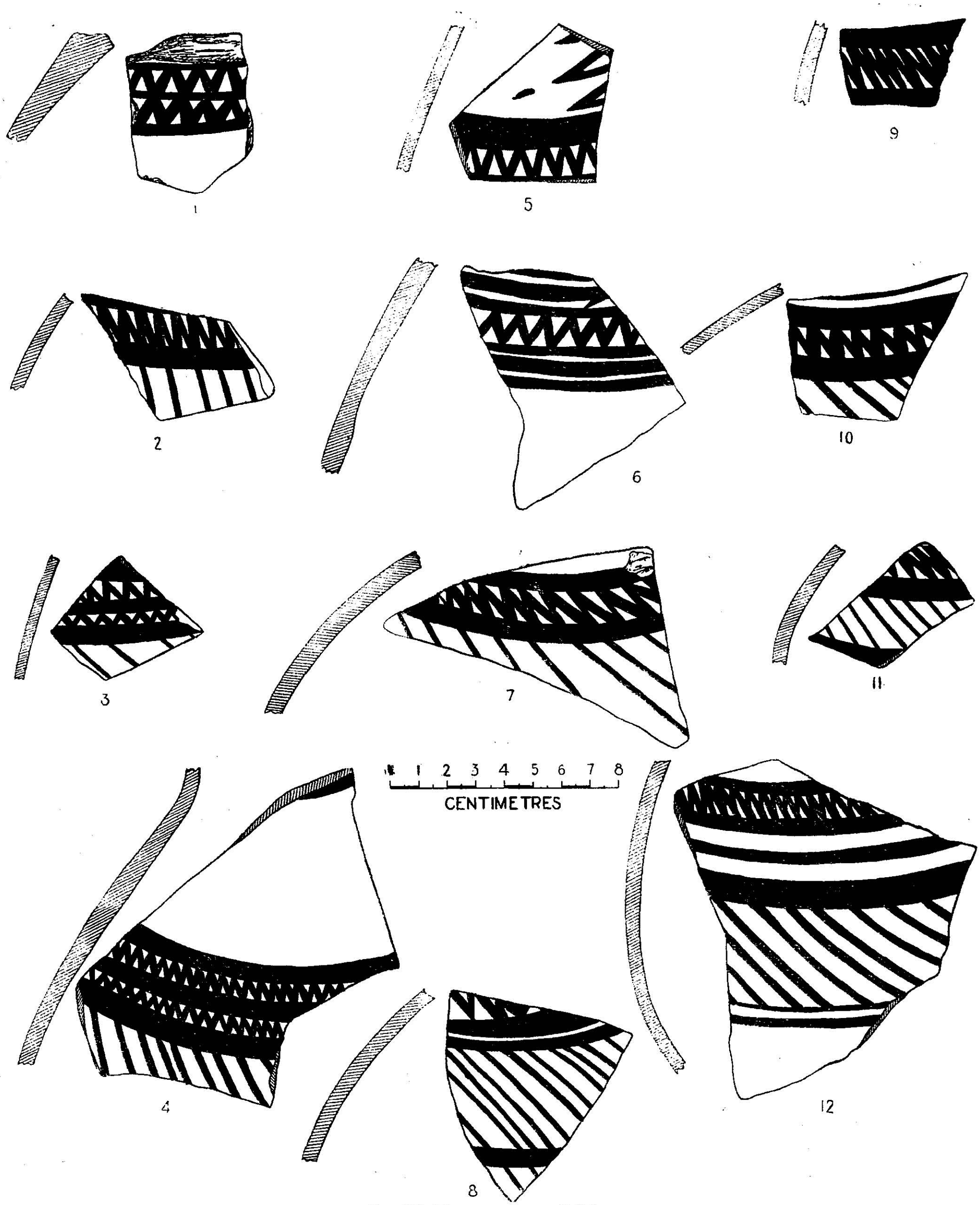

Fig. 79. Zigzag patterns (1-12).

(See p. 175)

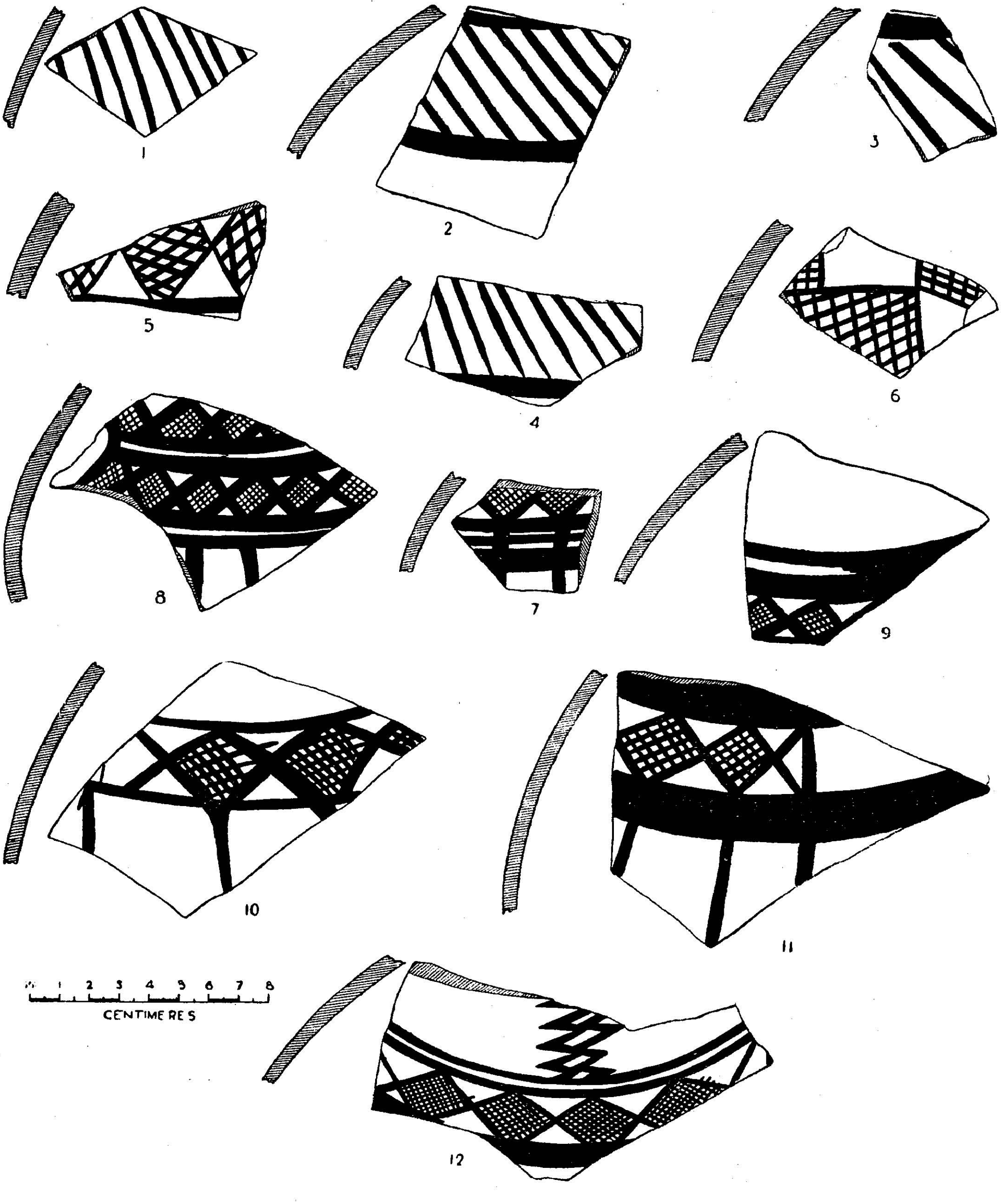

Fig. 80. Oblique Brush Strokes, Cross-hatched and Blank Lozenges, Squares and Rhomboids. (1-15).
(*See pp. 175-76*)

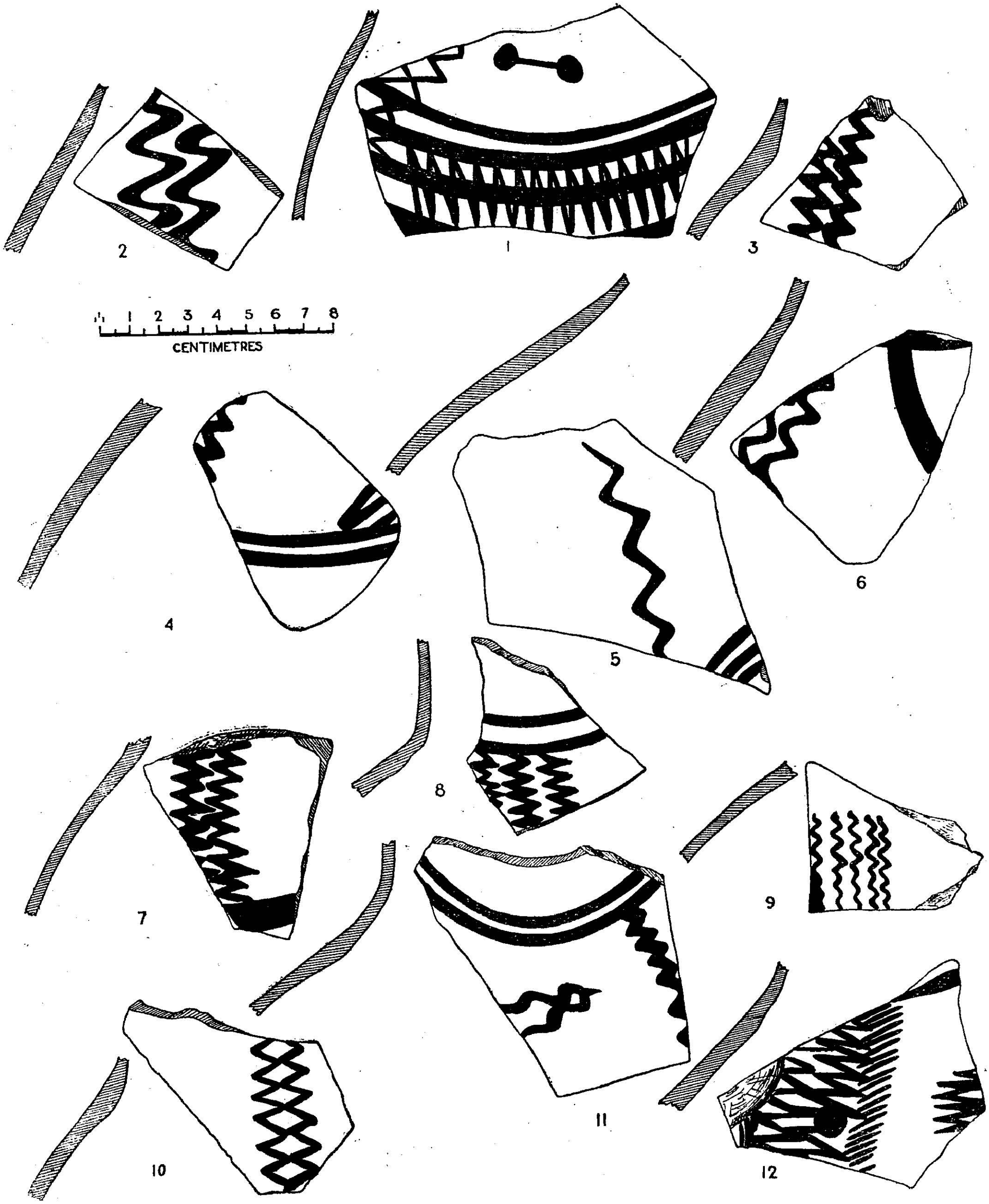

Fig. 81. Zigzag, wavy lines (1-12).

(*See p. 176*)

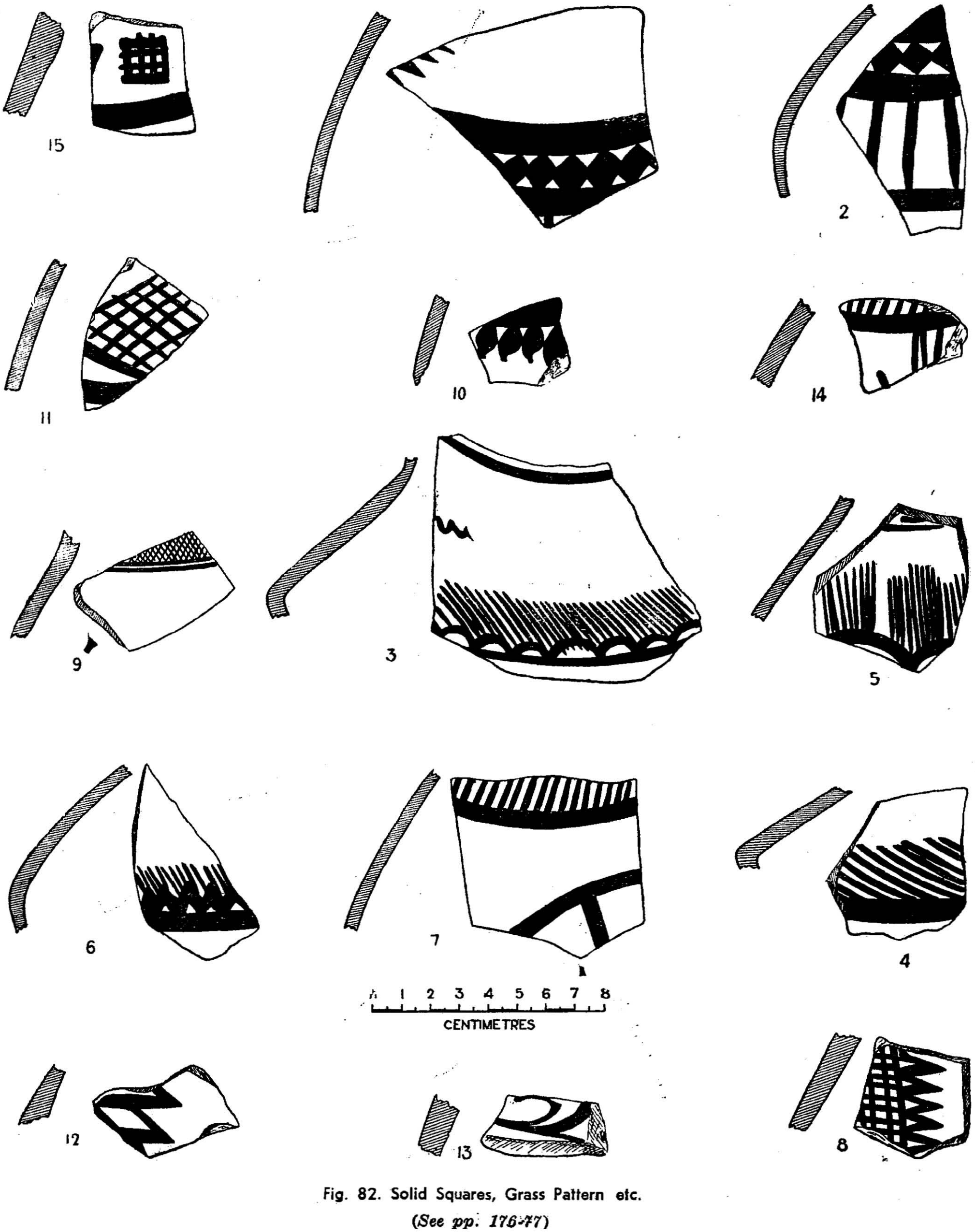

Fig. 82. Solid Squares, Grass Pattern etc.
(*See pp. 176-77*)

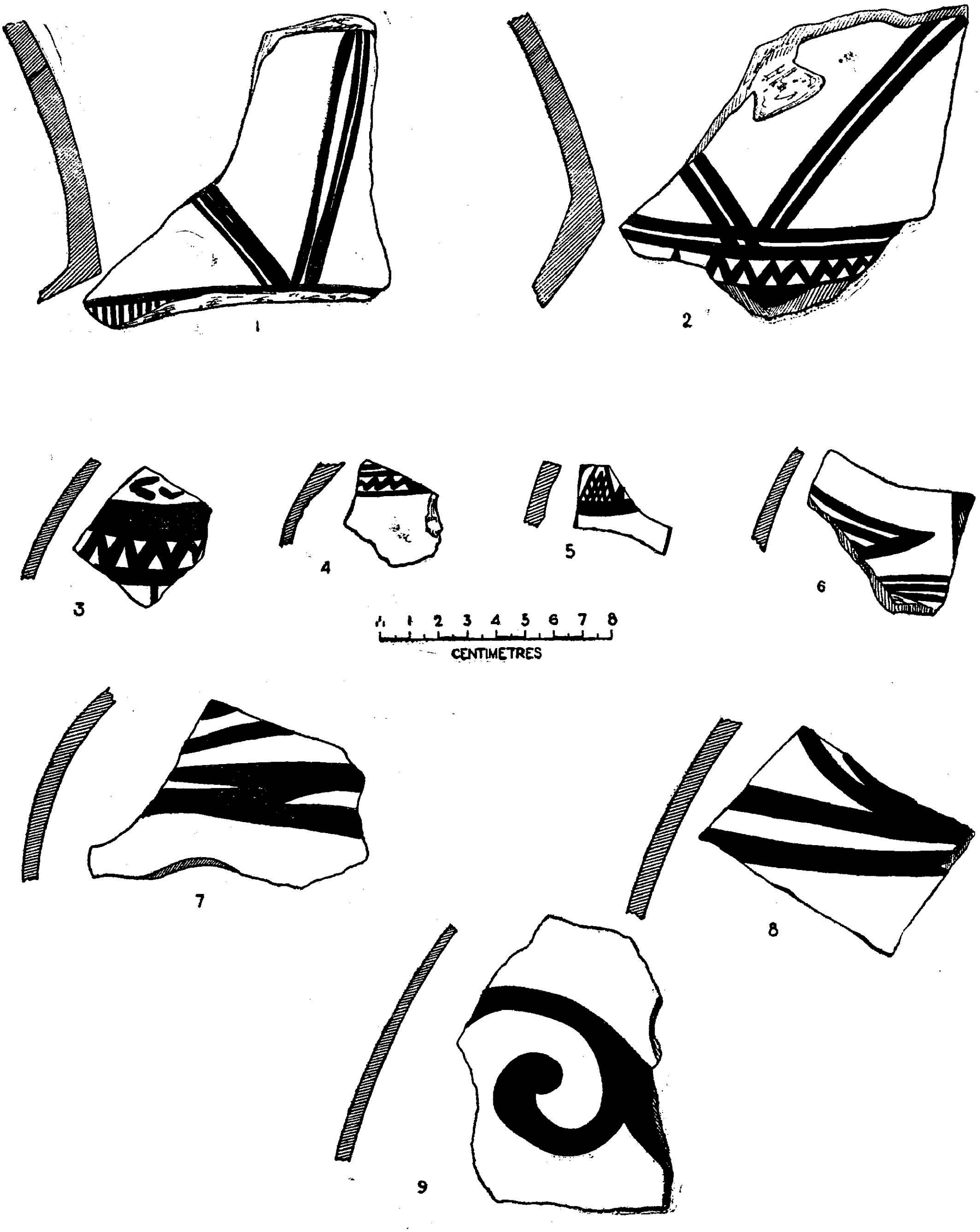

Fig. 83. Miscellaneous Designs.

(*See p. 177*)

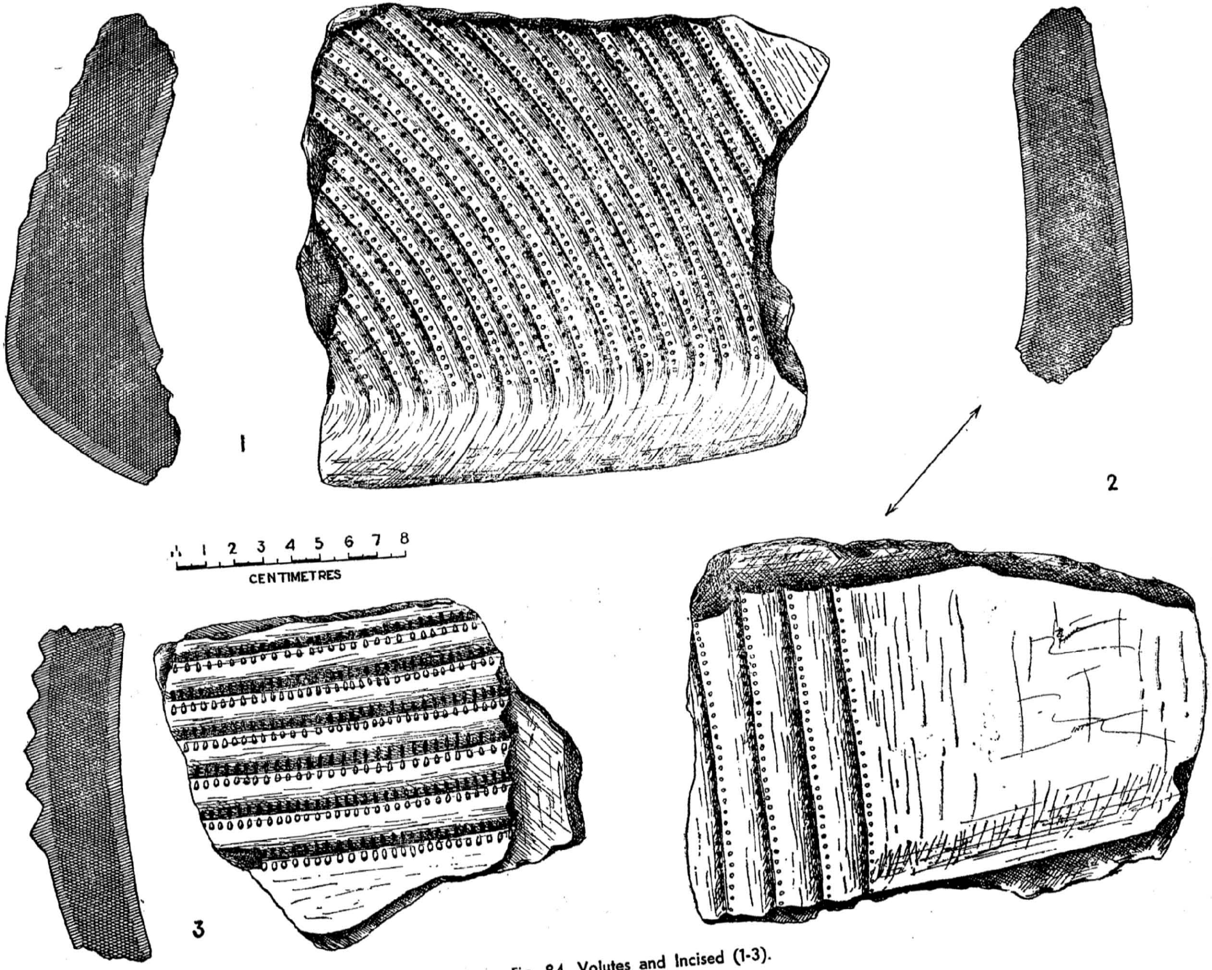

Fig. 84. Volutes and Incised (1-3).

(*See p. 177*)

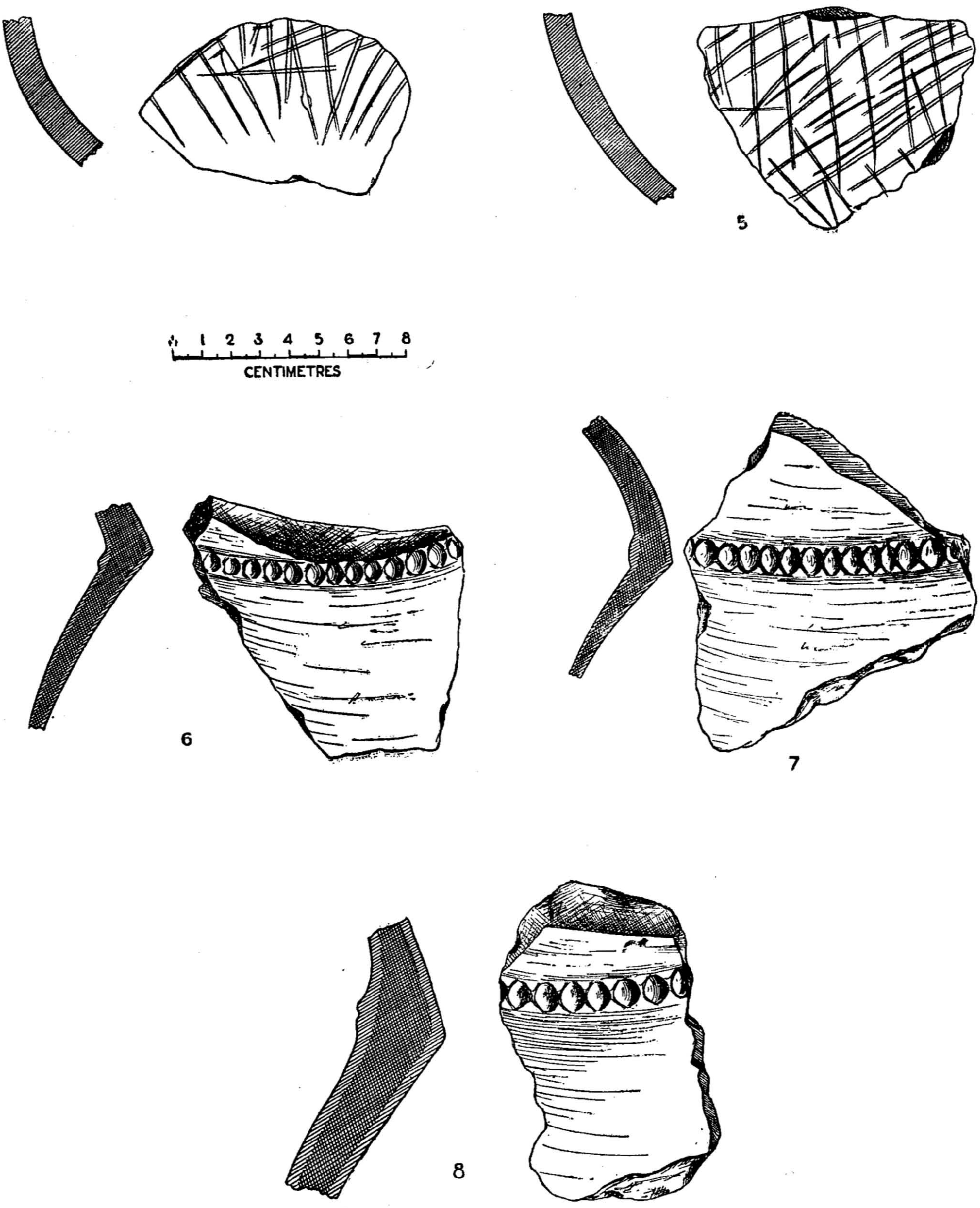

Fig. 85. Scratched and Incised.

(*See pp. 177-78*)

5. (Jrw. 3264) Details as in (Jrw. 834). Interior soot-blackened.

6. (Jrw. 409) Shoulder-piece, bluntly carinated vessel, the design on brown red.

7. (Jrw. 3187) Probably shoulder-piece, globular pot, the design on red. Probably handmade.

8. (Jrw. 3179) Small fragment, the design on dark red background.

9. (Jrw. 636) Small sherd, the design on yellowish red.

10 (Jrw. 2/315) Small sherd, the design on red.

11. (Jrw. 2/3157) Sherd, the design yellowish red.

12. (Jrw. 940) Sherd, the design on brown red.

13. (Jrw. 1/342) Sherd, the design on orange coloured background.

14. (Jrw. 1/40) Sherd, the design on red.

15. (Jrw. 827) Sherd, the design on red.

FIG. 83 (*Miscellaneous Designs*).

1. (Jrw. 1/20) Neck-fragment, globular vessel, the design on yellowish red.

2. (Jrw. 1/364) Neck-fragment, globular vessel, the design on pink red.

3. (Jrw. 1/339) Sherd, the design on light yellowish red.

4. (Jrw. 1/72) Fragment of a very small toy-vessel, the design on very light orange coloured background. Handmade.

5. (Jrw. 1/147) Sherd, the design on deep red.

6. (Jrw. 2/3196) Sherd, the design on deep red. Hand-made.

7. (Jrw. 781) Sherd, the design on blackish red.

8. (Jrw. 1/18) Sherd, the design on light red or tan.

9. (Jrw. 1293 and 129) Sherd, the design on crimson.

FIGS. 84-85 (*Decorated Sherds*).

1. (Jrw. 3323) Fragment of a large, thick-walled, storage jar of coarse-grained black ware, hard baked, very thick brick red slip, externally decorated with a series of relieved concentric rings bearing pierced holes along the slopes. The ornament in this and the two following is fashioned out of the slip, and vessels are handmade.

2. (Jrw. 3328) Neck-fragment of a large, thick-walled, storage jar, fabric etc. as in 3323. Externally decorated with groups of relieved vertical ridges pierced along the slopes with tiny holes.

3. (Jrw. 606) Sherd of a large, thick-walled jar of coarse-grained grey ware, fabric etc. as above. On the outside, relieved horizontal ridges pierced along the slopes with tiny holes.

4. (Jrw. 2576) Sherd of a pot made of two different pastes—tan and black—of medium fabric. Unslipped but the surfaces are smooth. The black outer surface is decorated with deep criss-cross linear incisions. Wheel-turned.

5. (Jrw. 2466). Sherd of a pot of medium-grained tan burning black ware, hard-baked, covered with a thick tan slip inside. The outside surface is natural and rough and is decorated with deep criss-cross oblique lines suggesting basket-work pattern. Probably handmade.

6,7,8 (Jrw. 1331, 1342, 2019). Decoration as in vessels shown in Figs. 71-72.

Jorwe has also given a fairly large sized (over 6″ in height) tiered or double pot (pl. XXXV 3). It has a flat but narrow bottom, bulging belly with carination, incurved sides, and slightly flaring rim. This supports a vessel over it which has a rounded base, sharply incurved body, and flaring neck with a groove. The vessel is greyish-brown in colour and rather coarse in texture.

VIII

Bead

Only one bead was found. It is of smoky chalcedony of long tubular shape with the outer surface well-polished. Length 21 mm., diameter 5 mm. JrW.I.

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